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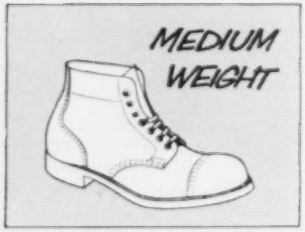

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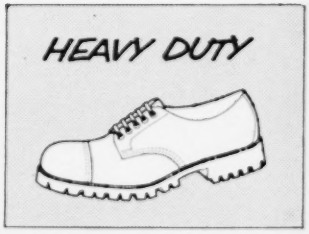

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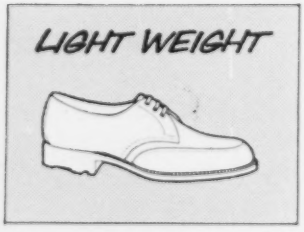

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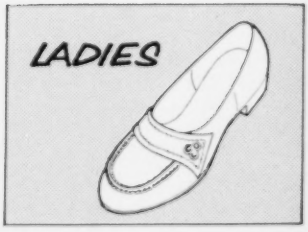

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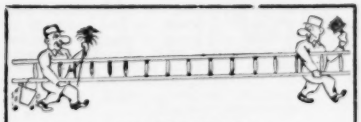

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18-19 Noise: IWS workshop dealing with practical aspects of noise measurement and means to alleviate noise in workshops and offices
25-26 Pension funds: intended for trustees of pension funds and for newly appointed pension officers
25-29 Foremanship: designed to develop the foreman's skills in handling people.

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14 Speaking successfully in business and in public: first of 10 weekly sessions for executives and management trainees with emphasis on simple and effective speaking.

INSTITUTE OF PERSONNEL MANAGEMENT

Head Office Meeting

24-29 Negotiating procedure and industrial relations: for personnel officers and others responsible for negotiating changes in wages and conditions of service, and the interpretation and application of trade-union agreements.

Branch Meetings

13 **North London.** Incentives in industry: talk by Mr. R. R. Hopkins, personnel and welfare manager, Vauxhall Motors Ltd. 7.30 p.m. Eastern Gas Board Demonstration Theatre, Enfield
21 **Cardiff and Newport.** Training of foremen: talk by Mr. M. Roberts, training and education officer, British Nylon Spinners. 7 p.m. Park Hotel, Cardiff
21 **East Midlands.** The influence of science on modern social thinking and opinion today: talk by Mr. N. Clarke, deputy secretary, Institute of Physics. 7.30 p.m. Overseas Club, Nottingham
27 **London—Slough Group.** Changing trends in personnel management: talk by Mr. H. E. Roff, managing director, Management Selection Ltd. 7.30 p.m. Royal Station Hotel, Slough
27 **Newcastle and District.** Council of Social Service: talk by Mr. J. D. Long, organizing secretary, National Council of Social Service. 7 p.m. Royal Station Hotel, Newcastle.

INSTITUTE OF WELFARE OFFICERS

27 **London.** Disablement: how its disadvantages may be met and overcome in all walks of life. Supported by a film—"New Lease of Life."

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13-15 Running a meeting: duties of a chairman, responsibilities of those attending meeting, planning and guiding, occasional summaries and breaking down a problem into its component parts
18-22 Management communications: guidance on efficient speaking and writing
28-29 Sales-letter writing: ensuring that letters obtain the right answers and that they have good public relations value.

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25-27 **Birmingham.** Letter and report writing: to give training in writing so that readers can quickly find and understand the information they need and are influenced as the writer intends.

OFFICE MANAGEMENT ASSOCIATION

14 **London.** Centralized dictation systems: illustrated case studies of use in offices of various sizes.

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3-8 Management strategy: based on participation in a business management game
10-15 Executive development: designed to stimulate thought on those aspects of personality and performance which help to make good managers; it is mainly suitable for those senior executives who have the responsibility of ensuring continuity in the direction of an enterprise
17-Feb. 5 Measurements for management: consideration is given to the methods of planning and types of control which are appropriate to such aspects as finance and the economic use of capital, sales and marketing, production, personnel, statistical methods, work study and operational research.

URCHFONT MANOR (Devizes, Wilts)

4-9 Work, leisure and ideas: designed to widen the outlook of apprentices and other young workers by introducing them to topics and ideas which usually have to be left out of technical college syllabuses
11-16 Thinking, speaking and writing: lectures and practical sessions cover committee work and report writing as well as clear thinking
18-28 The human factor in industry: for chargehands, union representatives and foreman.

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NEWS
NAMES
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H.R.H. THE DUKE OF EDINBURGH. speaking at the 10th Anniversary Luncheon of the British Association of Industrial Editors last month, defined the most important function of the house journal as being "to maintain a proper relationship between the industry which it serves and the community which serves the industry, because it is the community in which people have their homes and their friends and their families". He went on to say that he thought industry "would be blind if it only concerned itself with internal relations".

THE FIRST GROUP of Regulations have been made for dealing with arrangements for employees contracting out of the new graduated pension scheme in cases where they already belong to occupational schemes. These details are to be found in the National Insurance (Non-participation—certificates) Regulations, 1959—S.I. 1959 No. 1860, price 5d. As already announced by the Minister, the collection of graduated contributions is planned to start in April, 1961.

MR. PEARSON ARMSTRONG has been appointed Regional Establishment and Staff Officer, Eastern Region British Railways, Liverpool Street. His railway career began in 1921 and he started work on staff services in 1940. In the first stages of nationalization, Mr. Armstrong was closely associated with the staff re-organization arising from the fusion of the former L.N.E.R. and L.M.S.R. staffing arrangements in Scotland. To fill this position in place of Mr. C. S. McLeod, he has vacated the post of Assistant Regional Establishment and Staff Officer, Western Region, Paddington.

NO MANAGEMENT is doing its job properly if it does not heed the warnings of its supervisors. As a rider to his own statement, Mr. A. R. Thompson, Head of the Department of Commerce, Sunderland Technical College, added: "But a supervisor who can see only the shop-floor viewpoint and is insensitive to managerial problems merely becomes a shop steward". He was speaking at the North East Regional Conference of the Institute of British Launderers.

WORKS COUNCILS do not reduce the responsibility of managers and foremen for keeping their men directly informed about what affects them; whether it is changes in

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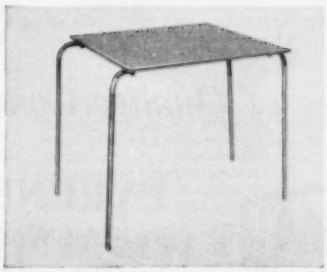
MS7. Stacking chair with 6 m/m plywood seat and back secured to frame by Chobert smooth-ended tubular rivets. Frame of $\frac{7}{8}$" diameter mild steel tube. Rubber silencers to legs. Tubing treated with phosphating process to prevent rust. Finished stove enamel. Seats and back finished in acid catalyst lacquer. Standard colours: red, green, blue. Seat height 12" to 18".



MS3/9. Nesting and grouping table. 18 m/m Formica multiply top. Underframing of $\frac{7}{8}$" diameter tube treated with phosphating process to prevent rust. Finished stove enamel. Tubular work in red, green, and blue. Top area 30" x 30", height 30".

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NEWS
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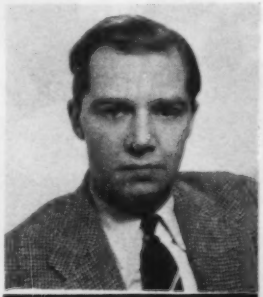
the production plans, or changes in the pay and conditions under which they work. This was just one of the issues raised by Mr. R. A. Banks (Director in Charge of Group C —Ammonia and Agriculture—and formerly Personnel Director of I.C.I. Ltd.), in the 1959 E. W. Hancock Paper delivered to the Institution of Production Engineers. He qualified this opinion by saying that it would be unrealistic to expect the fullest co-operation and hardest work from employees if these explanations were not given.

MR. HAROLD C. SPEAR was recently appointed Chief Personnel Officer to the Central Electricity Generating Board. Mr. Spear has been concerned with personnel management throughout his career and has held posts with His Master's Voice, Philips Radio Ltd., Hoover Ltd., The Sperry Gyroscope Co. Ltd., and the British Overseas Airways Corporation.



THREE NEW MEMBERS have recently been elected to the council of the Industrial Welfare Society. They are: Mr. J. Dundas Hamilton *(top picture)*, a member of the London Stock Exchange and partner in an old-established stockbroking firm; Mr. Sebastian Earl *(below)*, joint managing director of Selfridges Ltd., and a director of Lewis's Investment Trust; and Mr. B. D. Misselbrook, director of the British - American Tobacco Co. Ltd.

THE SIXTH REGIONAL OFFICE of the British Institute of Management has been opened in Bristol. It is the headquarters for the South Wales and West of England Regional Council of the BIM. The new manager for this region is Mr. I. D. Cunningham. Office address: St. Giles House, Quay Street, Bristol.

GOOD RELATIONS with the unions are not the whole story of industrial policies. This comment was made at the annual conference of the Institute of Directors by Sir Alexander Fleck, chairman of I.C.I. He went on to say that " These are complementary to and not a substitute

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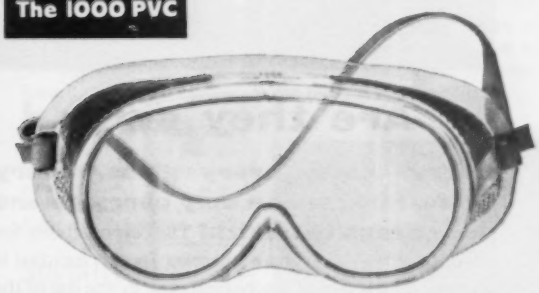

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WHG/534

for direct dealings with the men at the plant. These daily contacts will be quite informal and on a formal basis, the works council is the one I have found to be most helpful". He added that profit-sharing schemes could be used to cement the industrial relationship and the concept of co-partnership.

FIVE HUNDRED POUNDS have been subscribed to the National Council of the Y.M.C.A. by the Dunlop Rubber Company. Although this contribution is to support Y.M.C.A. activities in general, it is also designed to assist with financing work in the areas where the Company operates.

This month's cover

These researchers in the plastics division of ICI personify an exciting trend for the 1960's. Professor Drucker of New York University has broadcast that the three greatest industries in the USA will very shortly be education, electronics and chemistry. The same symptoms diagnosed by Drucker are already noticeable in this country: they will involve new responsibilities for personnel managers.

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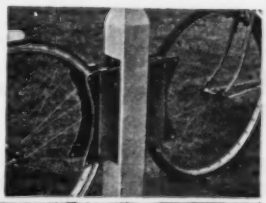

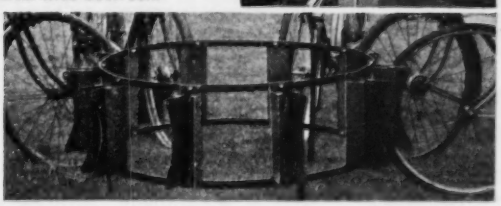

The ABIX Cycle Holder illustrated here has been designed for use in positions where our well known and popular types of cycle stand might not be convenient.
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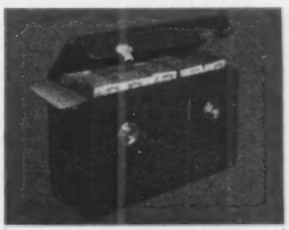

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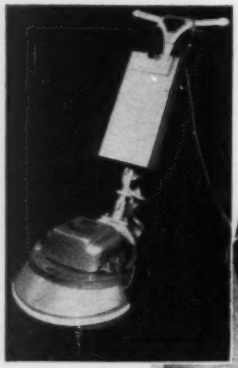

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PERSONNEL MANAGEMENT IN PRACTICE

MOST firms are now convinced of the usefulness of films for training in industry.* An outstanding example to those still in doubt is **The Carborundum Co. Ltd.,** of **Trafford Park, Manchester.** They have shown films to their workers and they have made them available on free loan to outside organizations. In the past six months alone they have produced three films dealing with the use of their products.

Now the Company has made another experiment in industrial films. About three years ago, American management journals were running features such as "How fast can you read?"—followed by the challenge to bring out a stop-watch and check your ability. This set them thinking at Trafford Park. What is it that enables the bright ones to read 600 words per minute whilst many find difficulty in passing the 200 mark?

They made enquiries and learned that experts at Harvard University had been working on this subject since 1948; and they discovered that Harvard had developed a complete reading course which made use of films as a coaching aid. Later, the Medical Research Council and the D.S.I.R. tried out the Harvard programme and, after a 12-month trial, the 194 students who attended the course achieved an average increase in speed of 28 per cent with a 'slight' improvement in comprehension.

Since the Harvard course is expensive, extended, and not practicable for the average-sized British firm, the Carborundum Company's Film Unit made their own programme, with the co-operation of senior management and operatives from the shop floor. This experiment succeeded because of the team spirit at the Trafford Park factory, and the results are staggering.

Using their film-coaching technique, they improved not only the reading speeds but even the comprehension of 'students'—in some cases by 34 per cent. A more fabulous improvement was that a typing pool was assisted (by this coaching method) to increase its output by more than 200 per cent.

A remarkable, public-spirited gesture is Carborundum's offer of this system to interested firms for a non-profit making figure. They can supply the equipment and they are prepared to train instructors at their Manchester headquarters. Deputy managing director, **Mr. George McKenzie** said that "there are already many instances of students doubling their reading speed and increasing their rate of comprehension after only three hours' tuition." Undoubtedly, this discipline is worth trying.

The superiority of the Carborundum coaching technique for speedy reading is evident from the graph (right). A group of 'students' at Trafford Park concentrate (below) on 'blinkmanship' and comprehension

THERE is no surprise when training improves productivity, but it is rousing when training methods improve the product itself. This is the experience of **W. G. Grant & Co. Ltd., Panmure Works, Carnoustie,** who introduced a new inspection and mending scheme to meet the increasing demand for quality among jute users.

For a month, four girls were trained in mending and afterwards in inspection in the firm's training centre where the most up-to-date methods of operative induction and training are used. Certain special tests were devised—perhaps the most important being the eyesight test which was carried out with an Ortho Rater machine. The training period was found to be effective because it was short and thorough.

Apparently, a high degree of perceptive ability is essential in a successful cloth-inspector. In many individuals, this is a latent characteristic and it needs skilled development. Throughout the training period, the inspection speed increased noticeably.

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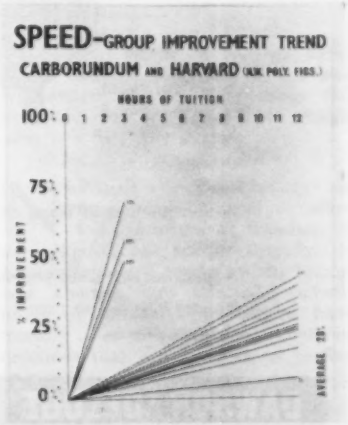

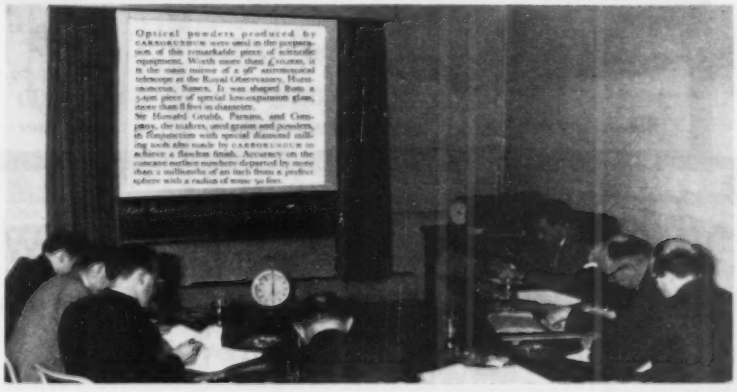
Optical powders produced by CARBORUNDUM were used in the preparation of this remarkable piece of scientific equipment. Worth more than £50,000, it is the main mirror of a 98" astronomical telescope at the Royal Observatory, Herstmonceux, Sussex. It was shaped from a 5-ton piece of special low-expansion glass, more than 8 feet in diameter.
Sir Howard Grubb, Parsons, and Company, the makers, used grains and powders, in conjunction with special diamond milling tools also made by CARBORUNDUM to achieve a flawless finish. Accuracy on the concave surface somewhere departed by more than 1 millionths of an inch from a perfect sphere with a radius of some 50 feet.

* *See 'Business Films' review on p. 20*

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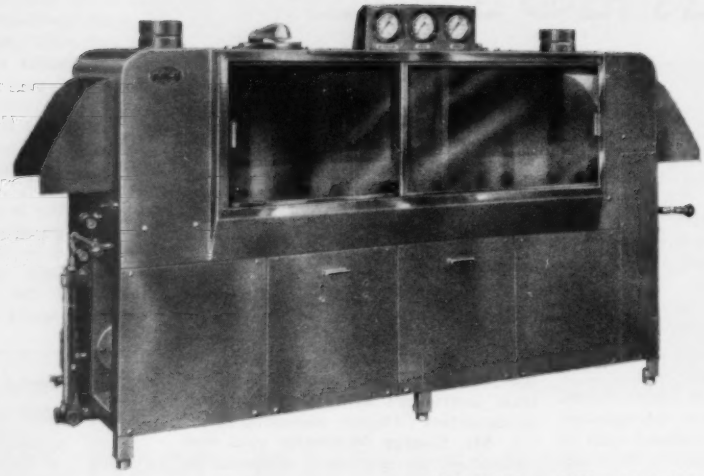

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PERSONNEL MANAGEMENT IN PRACTICE

Mending time was reduced as the trainee acquired greater dexterity and accepted the change in methods introduced until, under production conditions, two inspectors and two menders achieved what had previously been considered impossible—100 per cent inspection.

Before training, the output per person, inspecting and mending, was on an average around 12 cuts of 100-yard lengths each day; after training, the output per person is now 40-45 cuts of 100-yard lengths per day. To insert two threads in a piece of cloth 36-in. wide was taking 8 minutes, 22 seconds prior to training: now, only 4 minutes, 30 seconds are taken to perform the same operation. To achieve this striking success, method changes were made and inspection tables were redesigned and motorized.

★

DURING its first three years of operation, the apprentice prize scheme of the Ilford Region of **The Plessey Company Ltd.,** has been valuable to the management and enthusiastically welcomed by the apprentices. This was announced a few weeks ago, when the annual presentation of awards was made by **Mr. Michael Clark,** a director of the Company.

The selection process is carried out in two distinct stages. First, all the apprentices are assessed by Mr. C. W. Gomm, training and education officer. Points are awarded according to the reports of the departmental managers, the reports from the relevant technical college, and the timekeeping records.

The fifty best apprentices at this stage are then interviewed by an independent committee of four, which includes a manager, an engineer, a draughtsman and a representative from the shop floor (who this year happened to be a shop steward). The committee is free to put whatever questions it thinks suitable; leisure time activities are often asked about, and committee members try to judge the leadership potential of the candidates. The same committee examines both craft apprentices, and technical and student apprentices; and finally makes two awards for each class and stage of training and a special award for the Best Apprentice of the Year. The balanced composition of the committee ensures a broad view, and as its membership changes annually, any personal bias is eliminated.

Eighteen-year old Kenneth Smith receiving his award from Mr. Michael Clark, a Plessey director

The Plessey Company is finding their recommendations increasingly useful when the time comes for it to consider the future careers of apprentices, and the tangible award of Savings Certificates is an incentive appreciated by the young men themselves. The silver rose bowl, the plaque and the 25 guineas' worth of Savings Certificates that are presented to the Best Apprentice of the Year were this year awarded to **Kenneth G. Smith,** who is a first-year student.

★

NUMEROUS firms wisely use their house journal to allow top executives or members of the Board to speak directly to employees of all grades, when important changes are effected. Several issues of company publications have recently demonstrated the range of functions that can be covered in this way.

(Continued on page 15)

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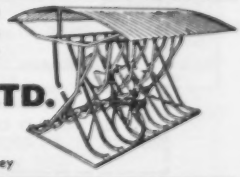

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PERSONNEL MANAGEMENT IN PRACTICE

On his appointment as managing director of **Brookhirst Igranic Ltd., Mr. W. Padley** contributed a foreword to *Intercom*, the firm's monthly journal. He wrote that the stature of the Company depended on "the skill and ability of all who work for the Company and of all who have worked for it, for we owe a great deal to a large number of able people who have preceded us". The general encouragement that followed, for a "co-operative effort of which I know there is certainly no lack in Brookhirst Igranic" —was rendered most acceptable by the sincerity of the managing director's appeal together with the fact that he saw fit to make it.

★

YET another good idea was the valedictory message of **Mr. Guy Chipperfield, CBE,** retiring chairman of the **United Kingdom Milling Group,** in *The Lobol Magazine*. Not only did Mr. Chipperfield take the trouble of having a special pre-retirement portrait photograph for this publication—an executive failing is surely the continued use of one photograph after the age of fifty—but he made a most friendly confession.

"I shall miss too my regular contacts with the splendid body of employees in mills, in offices, in the field, in research centres, in managements, who have by their combined effort, their skill and their enthusiasm enabled such substantial progress to be made.

"There are two things which matter much to a business man—happiness in the business and happiness in the home. I have enjoyed both in full measure".

★

A MORE philosophic epistle flowed from the pen of **John Brockhouse,** chairman and managing director of **J. Brockhouse & Co. Ltd.,** in his Company's magazine — *The Forge*. After a few paragraphs of reflection on the balance between labour and leisure, Mr. Brockhouse added:

"As productivity increases in industry, shorter hours are not only inevitable but desirable. Increased productivity enables men to produce more in less time, and leisure, which is one of the most precious forms of wealth, must be considered a natural reward.

"There are other considerations, many of them valid, which must influence the number of hours of work required from individuals. We have not only to produce for our own requirements, but to generate a reasonable surplus for export and a further surplus for progressive development and for the defence of our country.

"I believe we have reached the stage where we can, with benefit to all concerned, see a progressive reduction in the number of hours in the normal working week and that, in most cases, the amount of profitable labour achieved will not suffer".

★

SYSTEMATIC methods for the selection and training of foremen have been applied at a large wharf in the Pool of London—the proprietors are **Colonial and Eagle Wharves Ltd.**—with satisfactory results for them and for the National Institute of Industrial Psychology, who conducted the experiment. It is believed that this co-operative plan was the first of its kind in the dock industry.

The firm employs men to unload tea and other goods from barges, to store them in warehouses and afterwards despatch the goods to factories. High standards of supervision are essential to this type of work so that, when three vacancies for foremen occurred in the firm (earlier this year), the firm asked the Institute for advice.

It was decided to advertise the vacancies within the firm, to prepare a short list of the applicants, based largely on past knowledge of their work with the wharf, and then to run a group-selection procedure. The Institute's investigator arranged sessions at which the applicants discussed the nature of the foreman's job and exactly what a foreman's duties and activities should be. He also devised practical work in which the group solved organization problems with a model of a warehouse floor. During these sessions, occupying several days, it was noticed that certain men showed more initiative and ingenuity than others. Finally, the manager and the investigator interviewed each applicant and three were selected. On the basis of what had been observed during the group sessions and interviews, the

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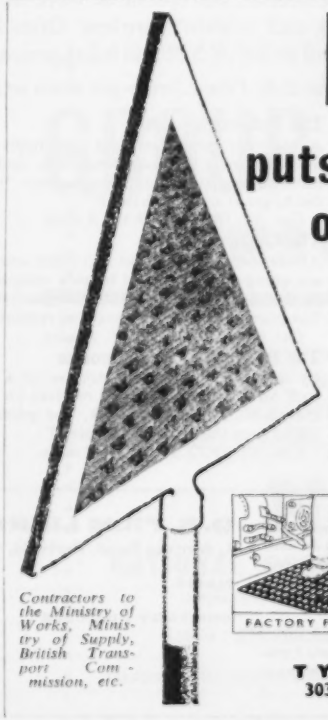

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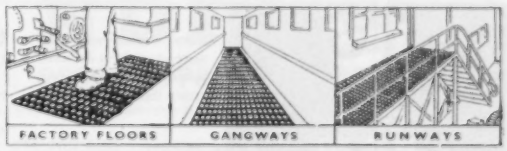

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How Much Co-operation?
A Manager asks for special co-operation and overtime from his staff. His apparent lack of understanding backfires some days later. The question: "What is co-operation?"
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In the Middle
The Office Manager is caught between an upset staff and a critical boss when he arranges the transfer of a key worker. The question: "What is a man supposed to do?"
Cat. No. IF.7200. B/W 7 mins.

Promotion By-pass
When a younger employee is promoted over him, the older employee resigns despite a talk with the Personnel Manager. The question: "What went wrong?".
Cat. No. IF.7199. B/W 9 mins.

The Follow-through
A Manager fails to explain adequately the operation of a new office machine, and returns to find trouble! The question: "How did he get in a spot like this?"
Cat. No. IF.7201. B/W 8 mins.

The Grapevine
An erroneous report that two office workers are going to be replaced by new computing machines disrupts the entire organisation. The question: "How can you stop rumours?"
Cat. No. IF.7204. B/W 8 mins.

The Bright Young Newcomer
By failing to direct the initiative of a new staff member, the Manager receives an ultimatum from his senior clerk. The question: "Why were the new ideas resisted?"
Cat. No. IF.7202. B/W 7 mins.

These Office Management films show everyday problems and difficulties. Each poses a question in order to start a discussion which can lead to a better appreciation of human relationship problems and a smoother running organisation.

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★ If you do not yet own a projector . . . you may contact, through the G.B. Film Library, a service that will provide both projector and operator for shows in the U.K.

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If you would like to know more about these and other Industrial Training Films, return this coupon to:

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PM 12/59

PERSONNEL MANAGEMENT IN PRACTICE

investigator predicted that one of these men would be outstanding as foreman, and the other two good. A few weeks ago enquiries showed these forecasts to have been accurate.

The investigator was also asked to design a training scheme for the company to administer. The first trainees were the three new foremen and three young established foremen. They work at their job while training which lasts, on a part-time basis, for nine months and is designed to fit them to supervise any job at the wharf. Previously, they tended to remain in one department. Through informal talks and group discussions, they are taught the place of the wharf in the transport system as a whole and also of the transport of tea from plantation to packing factory. This is supplemented by visits to docks, lighterage companies, tea auctions and a tea packing factory. They learn also about the flow of information needed for warehouse operations, including the Company's contacts and stock and despatch records.

On the practical side, each man is sent to observe eight of the jobs carried out at the wharf, and then he has to analyse and discuss them with his superiors until his knowledge is systematic and thorough. In future, the training scheme will be used for all newly appointed foremen. All speak highly of it; they especially relish the visits. They also impressed the management at the packing factory so much that they are arranging reciprocal visits for their own foremen. The standard of supervision at the wharf is now reported to be extremely satisfactory.

Although the content of the training has been adapted for the particular job, the Institute considers that there are lessons in this experiment for firms in other industries. It is also expected to attract interest among those responsible for the new plans for systematic training in the port industry as a whole.

EARLY morning tea—served between 7.45 and 8 a.m.—is now available for employees of **Spirella Ltd.**, foundation garment manufacturers of **Letchworth**, Herts. This arrangement began at the beginning of November and has been introduced as an additional service which many **employees** might appreciate.

"A number of our people come to work in transport which gets them here between about 7.30 and 8 o'clock," said a *Company spokesman*. "We think they might welcome the opportunity of having a cup of tea before they start work, particularly in the colder weather". Response to the new service so far is good.

★

THE Apprentice Committee at **The Vulcan Foundry Ltd., Newton - Le - Willows**, Lancashire, have reason to be satisfied with their block release course for boys sitting City and Guilds workshop examinations, so that this plan is now being extended for National Certificate courses. Started in January of this year, the third course (for City and Guilds) is now under way. Apparently this is the first firm in the country to try this method.

Instead of the usual part-time, day-release courses, boys attend full-time studies at Warrington Technical College for a period of 12 weeks each year. Altogether, the course lasts four years and boys are able to sit their final City and Guilds examination in four years instead of five. This system has obvious merits for the apprentices and helps solve the problem of juvenile unemployment as it enables the firm to offer employment to boys who are at the College full-time.

The proposed National Certificate Course will run on somewhat different lines owing to the requirements of H.M. Inspectors of Education who consider that 12 consecutive weeks would be too concentrated and would give the boys too much theoretical work to assimilate at a session. Therefore, the boys will attend for six-weekly periods twice a year: otherwise, the administrative arrangements will be virtually the same as for the City and Guilds course.

It is hoped to start this second project in January, 1960.

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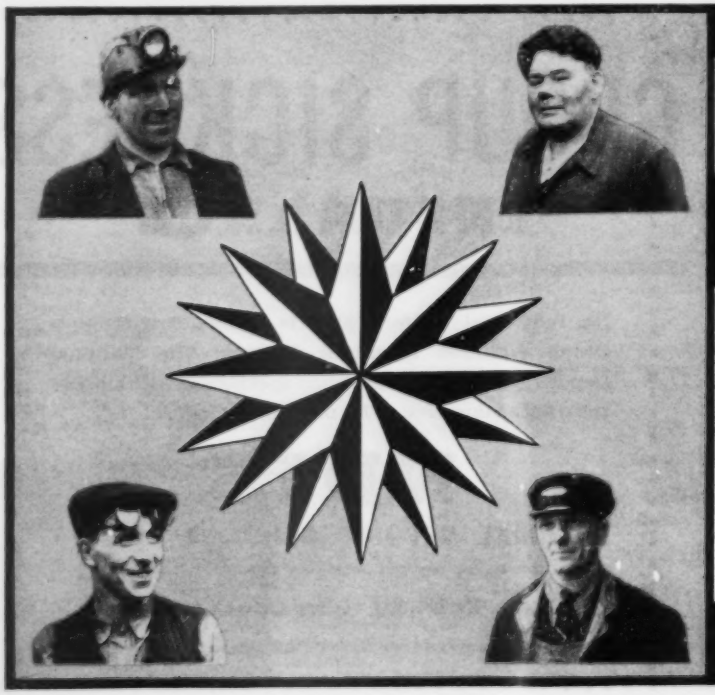

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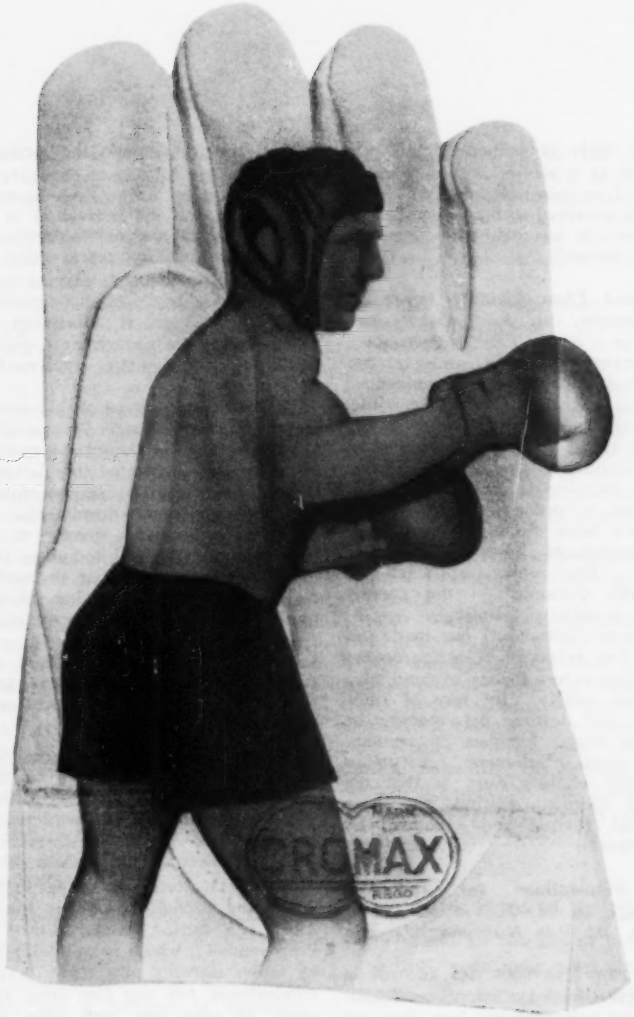

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BOOKSHELF

WORK STUDY ★

Business Films, by Peter Spooner. *Business Publications, 47s. post paid.*

A FORMER EDITOR of BUSINESS, Journal for Management, the author has had unique opportunities to gain a first-hand knowledge of industrial film users. His extensive personal knowledge has been supplemented by making an intensive survey of current practices and facilities.

The author gives case histories describing how to use library films for employee training and for effective communication; how to ensure that films reach the right audiences in the most economical way; and how to make simple, low-cost films for product-demonstration, selling, work study, industrial research and historical recording. The chapter showing how twenty-eight firms are using films will be of especial interest to anyone who is concerned with films professionally.

This splendid "plain-language guide to the equipment, methods, and professional services which are most likely to help the average firm" is supported by a skilfully arranged directory and bibliography.

Glossary of Terms in Work Study. (B.S. 3138:1959). *British Standards Institution, 8s. post paid.*

AS WORK STUDY is now being adopted widely outside the manufacturing industries in which it started—commerce, distribution, the Armed Services, agriculture, and hospitals, etc.—this glossary seeks to introduce standard terms and definitions to facilitate communication.

This booklet is divided into three parts dealing with general terms, terms relating to method study and terms relating to work measurement. There is also an excellent appendix covering terms relating to specialized fields closely associated with work study: job evaluation, merit rating, incentives, labour control, plant and machine control, wages and wage payment.

Work study is defined in this new Standard as a service within management and, as time has shown, it is now generally accepted without suspicion by employees as an invaluable mode of applied research.

Class and Class Conflict in Industrial Society, by Ralf Dahrendorf. *Routledge & Kegan Paul, 44s. post paid.*

NINETEENTH-CENTURY SOCIOLOGISTS, particularly those who were influenced by Marx, sought to explain a changing, conflict-ridden society primarily by relating the behaviour of people to their economic position. In this century, sociologists appear to be more interested in order than in change: they have been more concerned with the question of how social groups cohere. The older approach is essentially dynamic — the current method is relatively static.

Professor Dahrendorf has made use of the best points of both approaches in evolving a new theory of conflict in industrial society. By way of illustrating and testing his theory, he provides expert analyses of contemporary social phenomena. A curious distinction of this work is that the original German edition has been translated, revised and expanded by the author.

New Foundations for Industrial Sociology, by M. J. Vincent and J. Mayers. *D. Van Nostrand, 47s. post paid.*

THIS NEW TEXTBOOK for courses in industrial sociology examines institutions and organizations, how they are situated in society and how they affect our economy.

The authors devote four chapters to automation—as a factor involving continuous process, as re-organizer of the relationships of work supervisors, and as herald of a new industrial revolution. The influence of an increasing amount of leisure time is analysed as part of a new work-leisure function.

This book chronicles the profound effect of the American economy of abundance upon unions, management, government and the individual in the mass society. It also delves deeply into the enlarged and integral rôle the American government is playing in the economy as a result of the depression and World War II, outlining the expansion of the government's part in regulating wages, hours and working conditions.

The underlying theme of this work is clearly formulated: it is the contest of power groups—government, management, unions—presented in relation to the quest for security and the negotiations between power formations. By including a critical survey of the literature of industrial sociology from Adam Smith to the present, the authors can place management-union relations firmly in the sociological tradition.

Social Conditions in England and Wales, by A. M. Carr-Saunders, D. C. Jones and C. A. Moser. *Oxford University Press, 26s. post paid.*

NEITHER A COMPENDIUM of social data nor a reference book, this scholarly survey is well illustrated by statistics and is intended for all who want a readable and precise description of social conditions at the present time.

Several chapters will be particularly interesting to readers of this Journal. There is a section headed 'Entry into Employment', which is well supported by tables showing how many take up employment for the first time (each year), at what age, and what work attracts them. This part is followed by chapters on the industrial distribution of the population, industrial status and social class.

Protective associations are covered in some detail and the simple graph showing the increase in the membership of trade unions from 1935-55, a rise from nearly 5 million to almost 10 million members, is striking; and

the 20 pages of facts relating to the social security services constitute an inspiring record.

Training Services in Industry. *Industrial Training Council, 2s. post paid.*

WHAT SOME EMPLOYERS' organizations and joint bodies are doing to provide training services for the benefit of industries, is described in this booklet. Readers will recall that the ITC was set up a year ago to keep under review the recruitment and training of workpeople and to encourage, assist and inform industries about these matters.

This account of the development of training schemes and advisory services describes the main functions of these services under the following headings: provision of information, practical training and training aids, supervision of training and further education, recruitment, selection and induction, indenture and registration, tests and certificates and research into training methods.

Details are given of the services which have been set up in the chief industries. Iron and steel, engineering, building, motor vehicle retailing and repairing, wool, cotton, shipping, boot and shoe manufacturing, printing, chemicals, furniture, laundering, paper-making, glass, leather production—are covered and, for comparative purposes, a summary is included of the training arrangements in the nationalized industries.

Services and assistance also available to employers from the Ministry of Labour and a number of voluntary bodies find a place in the booklet.

The Modern Factory, by Edward D. Mills. *The Architectural Press, 37s. 6d. post paid.*

THIS INSTRUCTIVE BOOK has chapters on siting and layout, the factory estate, storage and warehouse accommodation, administrative buildings, industrial laboratories and industrial welfare buildings. The last-named chapter gives invaluable advice on canteen planning, cloakroom and recreational facilities, the medical department, the arrangements desirable in establishing a personnel department and copious notes on general welfare facilities.

The Field Sales Supervisor. *British Institute of Management, 18s. 3d. post paid.*

ALTHOUGH THIS PUBLICATION is one of the BIM Marketing Series, the sections on job description, recruitment and selection, training and communications are of general interest—particularly since the supervisor is 'in control of a body of men and his outlook must be that of a manager'.

Raising Productivity in Smaller Firms. *British Productivity Council, price 3s. post paid.*

THESE USEFUL CASE-HISTORIES are from firms ranging in size from six to 300 employees and from a wide range of industry including commercial vehicle body building, the manufacture of electrical components, narrow tapes and fabrics, lithographic printing, plastics, measuring instruments, office and school equipment and horticulture. An introductory article shows what an advisory service can do for smaller firms and also indicates how the National Union of Manufacturers operates.

This elegant booklet describes what has been achieved in 12 typical small firms through techniques such as work study, costing, production control, office organization and incentive schemes.

Supervisor's Handbook and Diary 1960. *Industrial Welfare Society, 5s. 6d. post paid.*

THIS POCKET HANDBOOK was produced to meet the demand for a non-technical handbook of industrial information for all levels of supervision from chargehand to manager.

Bound in stain-resistant blue Plexide, it contains a wide range of facts, figures and information of practical value to supervisors in all industries in their day-to-day work, plus a seven-days-to-a-page diary for 1960. Subjects covered range from accident-prevention to wage conversion tables, from ergonomics to income tax, from suggestion schemes to report-writing; and there is also the full range of standard calendar and diary information.

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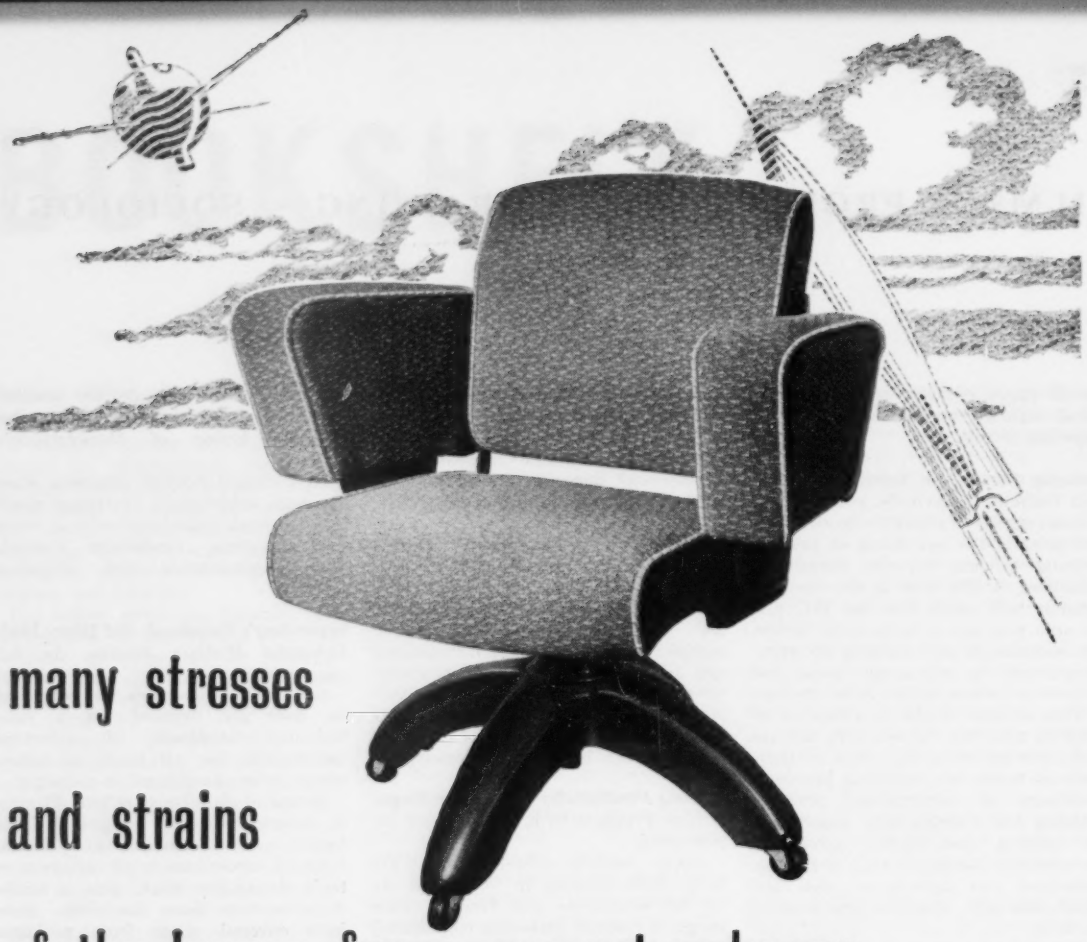

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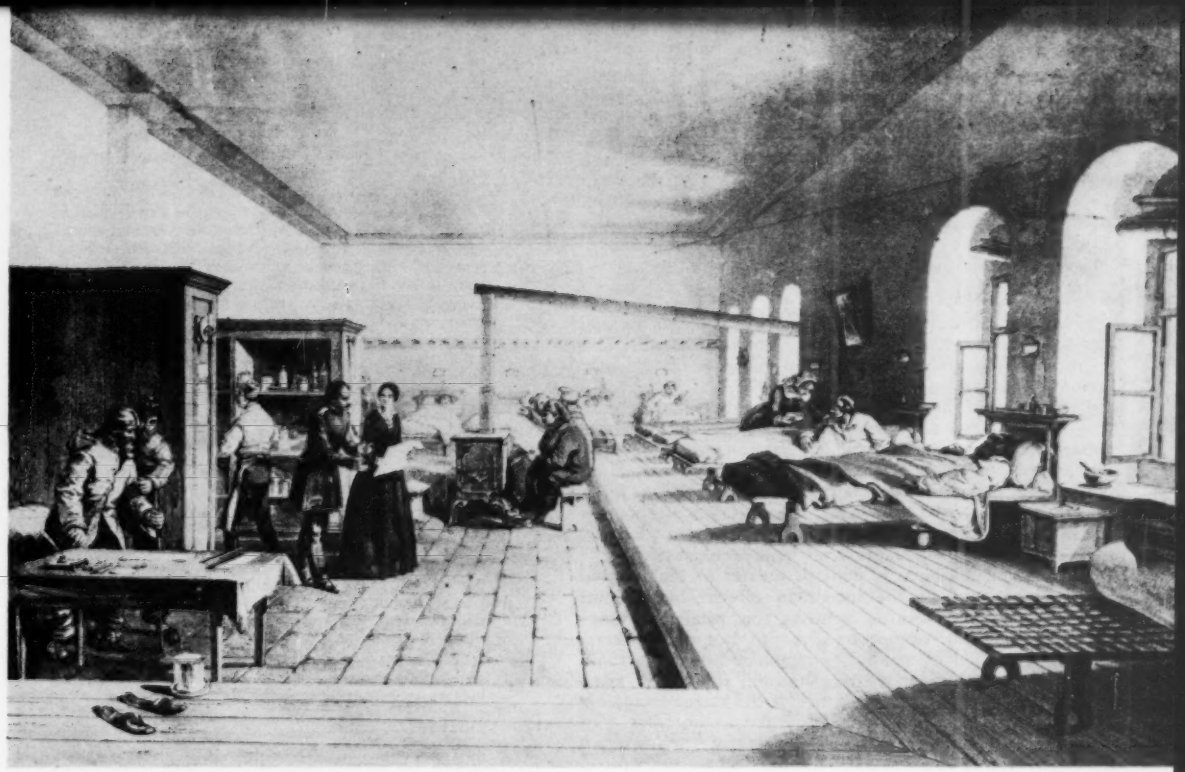

Conditions in hospitals have changed greatly since Florence Nightingale but the hospital service still seems shy of personnel management

RADIO TIMES HULTON LIBRARY PHOTO

Vacancy for personnel skills in hospitals

by Herbert Thompson*

ON July 5, 1948, the National Health Service was born; the gestation period having started with the Beveridge proposals for welfare services, the subsequent White Paper on the Health Services and, later, the National Health Service Act of 1946. The effect of the Act was to place on the Minister of Health a duty of promoting the establishment in England and Wales (Scotland being dealt with by a separate but similar Act), of a comprehensive health service of which the hospital and specialist services formed the most important part of the re-organization.

The most important aspect of the new scheme was that the myriad voluntary and local authority hospital administrations—apart from a few voluntary hospitals—was replaced by a single co-ordinated and uniform structure under the control of a Minister of the Crown. In England and Wales, 14 Regional Hospital Boards were appointed to act as agents of the Minister in administering and planning the non-teaching hospital and specialist services, and some 380 Hospital Management Committees were appointed to manage groups of individual hospitals, i.e., to be responsible for local administration. In addition, a number of Boards of Governors were appointed, with powers of both regional boards and management committees.

What has all this to do with personnel management? Well, altogether some 3,000 hospitals employing more than 400,000 staff of all types and grades came under central control in England and Wales, while in Scotland a further 400 hospitals employing 50,000 staff were taken over. Thus some 530 hospital authorities in Great Britain control

* *Mr. Thompson is a senior adminstrative assistant with the South-West Durham Hospital Management Committee*

between them about 450,000 employees and the annual wage bill is now more than £270 million, or more than 60 per cent of the total cost of the hospital and specialist services. What scope for personnel management, you may think. Yet out of all the authorities responsible for the work and welfare of the staff, it is probable that there are *fewer than 20* people who have been appointed to deal specifically with personnel matters. In other words, less than four per cent of the hospital authorities have personnel officers, or indeed a proper personnel policy.

Staff structure

This brief survey is enough to indicate that the hospital service is a natural enterprise for personnel work. This is not to imply that there should be a spate of specialist personnel officer appointments immediately. However it does suggest that there is much scope for the wider application of the known and recognized techniques of personnel management as in industry, which has long accepted—and with benefit—that the personnel function is a necessary and integral part of administration. Unlike industrial firms, hospitals do not have to consider the question of commercial profit, but they still need to secure optimum efficiency and output from their employees. The problem of achieving maximum efficiency is perhaps greater in the hospital world, since most of the incentives offered by business firms (such as merit awards, bonuses, free meals and long-service increments), cannot be given to hospital workers, who are governed by nationally negotiated conditions and wages. The only incentive that hospital staff have, apart from a supposed security of tenure, is the rather intangible one of interest in, and satisfaction from, the work. In addition, hospitals are staffed by workers of varying types and from varying social strata: doctors, technicians, professional workers, clerks, domestic staff and the rest.

The complexity in the staffing structure, and its consequent problems of staff relationships, together with high labour-turnover, inefficient placement, outside competition for labour and the colossal cost of staffing, all point towards a definite need for a better personnel policy. I use the word 'better' deliberately for, to be fair, some form of personnel management—using the term in the recognized sense of "that part of the management function which is primarily concerned with human relationships within the organization"—has always been practised in hospitals. Yet it could hardly be properly called personnel management, as it is practised, for the most part, quite illogically and without any system. It is the responsibility of no single person: the Secretary, the Matron, the Domestic Supervisor —these, and others too numerous to mention, are all concerned with staff matters. In one sense, this is good, for a personnel policy should be the concern of all departments: it should operate throughout an organization as a unified scheme and not be the prerogative of any one person or group. But there must *be* a policy and there must be someone with responsibility and authority for implementing it, even if he combines the job with other work or, better still, has personnel responsibilities to more than one hospital authority. This latter suggestion is feasible, as joint appointments have been made, and work well, in the financial section of hospital administration, and it would have the advantage that this personnel officer would be a specialist in his own right.

The need for a hospital personnel policy cannot be refuted. But is it possible to lay down a list of broad principles and duties to form such a policy? I believe that it is, and offer a suggested framework around which a firm structure can be built.

SUGGESTED POLICY

To use proper and objective selection procedures.

To seek to place staff in work which is best suited to them, bearing in mind their qualifications, experience, abilities and preferences.

To provide adequate training facilities for all grades and types of staff and to have proper induction arrangements.

To encourage the filling of vacancies by promoting existing staff so long as adequately qualified and/or suitably trained and experienced candidates if available for selection.

To aim at job security for all staff and to provide an impartial policy in the event of redundancy.

To take all possible steps to avoid overtime and excessive hours of work.

To maintain just discipline.

To provide adequate physical working conditions.

To be responsible for the promotion and maintenance of a health and safety programme.

To maintain fair and adequate standards of remuneration, and conditions of service, consistent with national agreements.

To evaluate staffing requirements and to advise the management accordingly.

To assist with staff gradings and to ensure that work is spread evenly among the employees so that each worker has a full and responsible job commensurate with his status.

To allow all staff direct and confidential access to their departmental head or to the senior administrative officer of the hospital or group, or to the appropriate Board or Committee.

To accord freedom to all staff to become members of trade unions or professional organizations but to accord equality of treatment to members and non-members alike.

To grant facilities for joint consultation and to use it, and any other suitable methods for keeping staff acquainted with any matters affecting their work in, and the efficient working of, the hospital service.

To maintain complete personnel records and to provide the management with any necessary employee statistics.

To provide, or to encourage the provision of social activities and amenities and to assist in their management.

To recognize the value of the individual as a human being whose welfare, in the widest sense, is regarded as an end in itself and to provide the foundation for this welfare in helping the worker to find interest, free self-expression, satisfaction and happiness in his job.

To aim at utilizing, to the full, the services of the staff for the benefit of the patients.

It is impossible to discuss all these recommendations relating to hospital administration today: there is only space for a superficial outline. But so many deficiencies can be indicated: inadequate training and induction methods; high and varied staffing ratios; excessive labour-turnover; inefficient use of personnel; low morale; strained relationships; inadequate research, and so one. I would, however, like to touch upon what I consider to be the most glaring and most serious deficiency and one that has repercussions on

Advantages won by first-class nursing and medical science are easily lost through faulty organization
ASSOCIATED TELEVISION PHOTO

all aspects of personnel policy because it is fundamental to any system. I mean, of course, the methods of staff selection.

Professional remedy

It is true that a recent Ministry of Health circular has notified hospital authorities that outside assessors are to be appointed to selection committees, for the appointment of middle and senior grade administrative staff; but while this may be the beginning of a greater interest in personnel matters by the Government, it goes only a very small part of the way towards improving the selection techniques and it relates only to one section of the staff. The whole question of staff selection needs overhauling and tightening up, for the majority of hospitals do not prepare adequately for what is one of the most important and most lasting of their activities. It seems, for example, that few authorities go to the trouble—for that is what it must be—of preparing job specifications or job descriptions when an appointment is being made. Yet how can they hope to select the most suitable candidate for the job unless they have a full knowledge of the work that is to be done and the qualities, experience and abilities of the person who is to do it?

Much the same applies to the assessment. The problem of evaluating an applicant's suitability is a major one, anywhere, and demands the most careful thought and preparation. Anything that can help a committtee to make up its mind, correctly, should be used. Most hospital interviewing committees use, at best, amateurish 'hit and miss' methods, and it is something of a miracle that there are not more misfits. I don't suppose that one-tenth of the people sitting on hospital selection boards have heard of rating, for example, and fewer than this number will use any type of assessment form or interview report to help them to make an effective and impartial judgment of the candidates appearing before them. While the circumstances of an interview are too variable and complex for any fixed set of rules to apply in all cases, it is a simple matter to draw up a flexible system which can be used by inexperienced people as a guide for conducting an intelligent interview and making reasoned judgments. The National Institute of Industrial Psychology's seven-point plan offers a systematic guide in this respect and it could be adapted, with profit, by hospitals.

More regard should be given to the reception of candidates before the interview, to the physical conditions of the waiting room, to the reduction of nervous tension and such like. Hospital interviewing committees are often far too big and can 'put off' a nervous candidate. I can recall one girl being interviewed for hospital work by a committee of 10. She had not been told that there would be so many and when she was shown into the interview room, she was so tense and nervous that she could not speak. Words failed her and she had to be excused—without any hope of securing the job. Yet on paper she was a splendid applicant and might have been by far the best person for the post. Small committees would make for better appointments under less artificial conditions. They would tend to result in *rapport* between interviewer and interviewee instead of the 'one-sidedness' that so often prevails in large committees where the candidates are asked stereotyped questions of such a nature that they can be answered by monosyllables.

I have heard of one interview where a candidate was actually appointed to a middle-grade administrative post by merely answering 'yes' to every question put to him.

Reasons for change

I have merely touched the fringe of one of the many deficiencies in hospital personnel management, but I am sure that enough has been said to show that there is indeed a vacancy for it, in the service, where it could bring about, among other things, reduced labour-turnover, more effective team work, increased output, better morale and most vital of all, from your point of view, and mine, reduced labour costs—costs which are always rising and which result in an ever-increasing burden on the taxpayer. The hospital service has many creditable achievements to its name: it is a pity that its personnel policy is not one of them.

Model employers in Sweden recognize that good business makes men as well as money

Widening the road to the top

**God's Hand*

by James Platt

IN 1955, anticipating the 'bulge,' the Swedish Government promised to double the scope of technical education by 1970; by the end of 1958 this promise was fulfilled. Industry's own schools can only ever cater for the needs of the sponsoring firm, but by raising the total number of schools from 125 to 325 in three years, the Swedish Government has shown that real chances are being offered to willing students. The question is: will young workers take the suddenly prepared chance? We should realize that, in Sweden as in the U.K., the major labour force problem of the 'sixties will be one of quality, not quantity, as the number of top - production level 25- to 45-year-olds falls, and the great 'bulge' of youth comes to work. In 1950 there were 400,000 Swedish boys aged 14 to 18: next year there will be at least 600,000.

This problem alone will involve changes in management perspectives. Professor Carlson underlined the fact that the head of the big firm has as his principal task today "not to lead but to plan and organize." But much inspired industrial leadership is still needed to put some meat on the skeleton of plans and organization; much more personnel research must be done at all levels; the top management and labour organizations must persevere in their efforts to keep alight the 'Saltsjöbaden spirit' which led to one of the most far-reaching industrial labour-management agreements; and the young man of today must have a real chance of getting to the top if he is worth it. Of today's bosses, about 14 per cent are sons of big-firm owners; 16 per cent of big-firm managing directors; 24.5 per cent of senior executives; 12 per cent of lower executives; 10 per cent of farmers; 3.5 per cent of ordinary workers. Today's typical leader has been aptly summed up:

> "He would be about 45 years old, possess a figure like Fred Astaire, come from a middle-class home in a small town, have gone to law or engineering school, be interested in social problems and internationally orientated, wisely married and affable in manner. Sailing may be his hobby and his greatest need is—sleep."

* *An apt symbol of "Industry and Man," this world-famous sculpture is a monument to C. E. Johansson, the inventor*

Ladders of promotion have been multiplied in the 'fifties. In fact, the comment most recently met is that promotion has been much too haphazard and that more training in management and top leadership should be organized. Now, in addition to the labour and management schools I have mentioned, lengthy university courses in management are planned, and a Scandinavian plan for higher technical education has been proposed.

Whole picture

This decade will also be one of industrial rationalization and automation in Sweden. Much has yet to be done to strike a balance between the cities and the countryside, and to bring the countryside even more into the industrial picture. Here Sweden, with its admirable nature-preservation laws and the solid, prosperous 'Bruk' system already in its blood, has a chance to show the world how a top-class industrial nation can still preserve for its people a high degree of amenity, can still prevent the relentless spread of industrial areas, can still afford that sense of belonging which has been shattered by the growth of our new towns and industrial districts. These are some of the most certain grounds on which community life and, following from that, good industrial relations, can be based. Sweden has already made a start, for in the past 10 years more than 300 firms, employing over 20,000 workers in all, have had their geographic placing determined with the help of economic-political authorities. But more movement - stimulating measures are still needed. Bertil Olsson of the National Economic Association asked: "Does Sweden really need 270 shoe factories, 300 hosiery factories, 600 textile-tailoring factories?"

There has been a recent crescendo of interest in the individual man at work; it has done much good even though many trade unionists say: "We've had to fight for everything. The employers have been forced to improve things: they have not done it because they wanted to. And that is a bit hard to forget."

Now, more study should be made of the place of industry in the social structure of the community. Both industry and community stand to benefit. "But, until the present," as Axel Iveroth said, "most European employers have been unwilling to believe that an influential position in business or industry implies a duty to assume more than the average responsibility for the welfare of the community. The critical attitude most business leaders have taken in regard to social welfare policies has been a poor substitute for the political wisdom they should have displayed in dealing with community affairs".

Iveroth's sweeping criticism, when quoted to a Swedish managing director, elicits a response met in most other sides of Swedish private and business life. "What on earth do you expect, when we are taxed to death, hampered by every kind of restriction, made to support layabouts, received with suspicion when we try to instigate social welfare programmes, shown the door if we try to do voluntary social work, and treated as children by our socialist bureaucracy?"

Cases have certainly been known where a new young boss, eager to extend the company's welfare programme, has come up against the displeasure of the local union leaders who regard the suggestion of improvements as one of their perquisites.

Iveroth's comments notwithstanding, many of the firms I visited had a wide range of 'fringe' benefits which extended to community welfare programmes. The last nationwide survey (in 1952) of benefits in firms with more than 50 workers showed the following average costs of 'fringe' benefits as percentage of total earnings (*below*). Bearing in mind that certain items—

ANALYSIS OF SWEDISH WELFARE 'FRINGE'

Benefit	Salaried employees	Workers	All employees
Vacations	7.1	6.3	6.5
Pensions	14.3	0.6	4.2
Health and Medical Care, other Sickness Benefits	3.3	2.8	3.0
Housing	3.0	2.1	2.3
Other items	2.5	2.4	2.5
Total ...	30.2	14.2	18.5

This is one of the Uddeholm workers' holiday homes: communities linked with the Uddeholm Company are integrated with it

mainly those connected with workers' pensions—have been undervalued, it is probable that total 'fringe' benefits constitute about 20 per cent of earnings.

I found that the dynamic and scope of personnel provisions and 'fringe' benefits seldom depend on the size and prosperity of the firm in Sweden. Some large firms say, "We put our welfare in the pay packet"; some small firms have a well-developed, detailed programme.

The most surprising deficiency was the lack of collated welfare and benefit statistics in many, even large, firms. One world-famous firm employing 8,000 workers had no idea of the various emphases in its benefits programme, had no programme in fact, though it spent well over half a million pounds yearly on welfare and 'fringe' benefits. Another firm, though it knew its costs, refused to reveal them to the workers on the grounds that they might be used in arguments against the firm later on. But the presentation of 'fringe' benefits (as neglected a field in Sweden as in Britain) is a field too detailed for this article to cover.

Leading firm

However, chocolate-firm Marabou is a good example of Swedish personnel work at its best: it has a wide range of benefits, a high level of personnel departmental work, both of which are supported by a very effective presentation of costs and reasons.

Its former personnel chief, Sven H. Asbrink, now a leading international figure, had a great influence on its personnel programme. Marabou spends rather more than the 'norm' estimated by the Employers' Confederation for a firm of its size and kind, but the money is well invested. Local folk stroll through its lovely park when works lunch-hour is over; working conditions are a delight; the hot-air Bastu baths are open every day; employees' children can have 50 days free holiday each summer under trained leaders at the children's camp; the 'bachelor' villas are a very comfortable solution to one awkward problem; the family parties, works-committee trips and tours of other factories and towns give the workers a useful perspective; and the medical service under the direction of the head of Sweden's Public Health Board, giving free general consultations and manicures as well as accident treatment, helps to maintain high standards of health.

Marabou also employs one of Sweden's 200 'Personnel Consultants'—a direct development of the pioneer work of Miss Kerstin Hesselgren, who was inspired by British industrial welfare at the beginning of this century. These consultants give help with rents,

Uddeholm workers fishing in one of the lakes stocked (by the Company) with over 30 million fish in the past seven years

taxes, pensions, national service and other personal problems: they are not a half-way house between workers and management but a real service to workers in an important fringe area neglected by many firms in Sweden and Britain.

Asbrink laid down some solid principles at Marabou, all based on good working conditions "for even the best welfare and 'fringe' benefits are little compensation for bad conditions." Anticipating the need for more careful medical-psychological control during the process of new worker assimilation, Asbrink established an induction routine. A major part of this scheme was to give the new worker "as soon as possible, the same possibilities of communication up, sideways and down as the old-established worker." An 'information path' was designed for orders and news, and at Marabou some of the standards for the development of works committees in Sweden were created.

"If you had only one worker," said Asbrink, "you would probably tell him quite a lot about your plans and problems. And very likely you would ask him for advice. This, in its turn, could stimulate his interest in his job. So it is all the more regrettable that this quite clear and very useful information so often disappears when the firm employs more than a few workers. Good information is an important way of shaping a good spirit in the firm."

Tradition helped

In his view, every firm should plan an 'information path' to propagate the answers to each of the questions above.

Marabou is a big-city firm with big-city problems. Uddeholm is the modern descendant of one of Sweden's noblest 'Bruks': a commonwealth of timber, water and steel in the heart of rural Sweden. Its personnel and community welfare work cannot be evaluated separately for the company virtually *is* the community in its 1,100 square-mile empire with its dozen small towns and a hundred villages. As Prince William of Sweden wrote: "The mill-owners appear often to have been enlightened despots, combining this trait with the dictatorial powers they had appropriated for themselves in accordance with the custom of the times. There is no doubt that, despite their arrogance and the manner in which they often abused the authority with which they were invested, they were none the less, as far as their horizon permitted, men of progress as well as bearers of culture to a great part of Värmland that still lay plunged in ignorance; and that their large estates were seats of knowledge and refinement which even brought a certain prosperity to the province."

PLAN FOR INFORMATION PATH

Every firm should ask itself these questions, says Sven Asbrink, of Marabou:

What do I want every worker to know about the firm?

What, in addition, do I want the more specialized workers to know?

What things that are liable to change do I want every worker to have regular information about?

Which groups should have special orientation on certain events?

What decisions or future plans do I want workers to keep up with?

What do I want the workers to know about long-term possibilities?

Human dignity

Provisions are not enough, though, as Salomoson's book showed. "The Man Outside" must be invited in. Uddeholm's former chief, Nils Danielsen, said towards the end of his great term of management: "Despite all the technical developments, mechanization, concentration and automation, the human being is still the primary factor, now more than in the past. And it is desirable and important that each and everyone understands the whole position and his own contribution, for this can mean much in giving the worker variety and rest from a sometimes demanding and monotonous job."

Variety and rest are not the only things Swedish workers want, but Salomoson's book will have done some good if it causes both management and labour to look for new ways of communication and job-understanding; for there is a need in Sweden for ways of giving the worker the long-desired social status to go with his present material prosperity, and a feeling of being appreciated without resorting to doubtful incentives or a "Hero of Labour" medal; and also a need to give him the chance, both at work and in his wider community life, of living up to his potential.

"It is a matter of making a common study of common problems," Iveroth wrote, "And most important, a united effort to evaluate the prospects of business and the community as a whole. At the moment, few businessmen realize how urgent is the need for supporters of a free economic system to examine its ideological foundations and to propose a social welfare programme of their own for an industrialized world. The conservative wing of the industrialists must be persuaded from within and, step by step, made to believe that they have chosen the right road of their own volition. The same is true of the labour movement on the other side of the street."

Man in society

This is a job for all: workers, employers, community. The employers in Sweden have a fair record that many of them are trying to improve. Many workers, probably the majority, do give a damn; industrial relations, based on collective bargaining for a whole industry may yet suffer somewhat from that very advantage and will continue to be balanced on the thin edge of class feeling, but should improve as employers and workers meet more often in the middle of the street instead of shooting it out from either side. And if more active help is given by communities in what should be, but so seldom is, the two-way traffic of industry-community goodwill, the worker may emerge in his own and his employer's view as the essential beginning and end of the industrial machine, and not just an intermediary and replaceable spare part.

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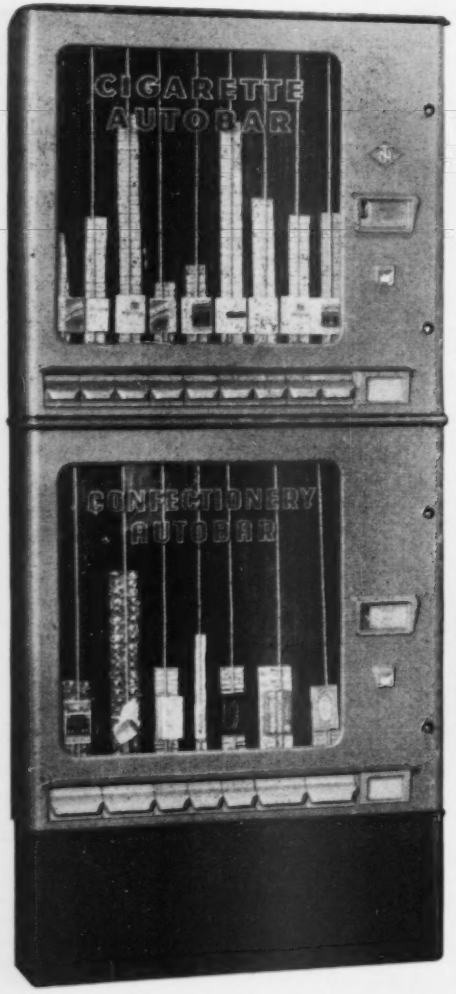

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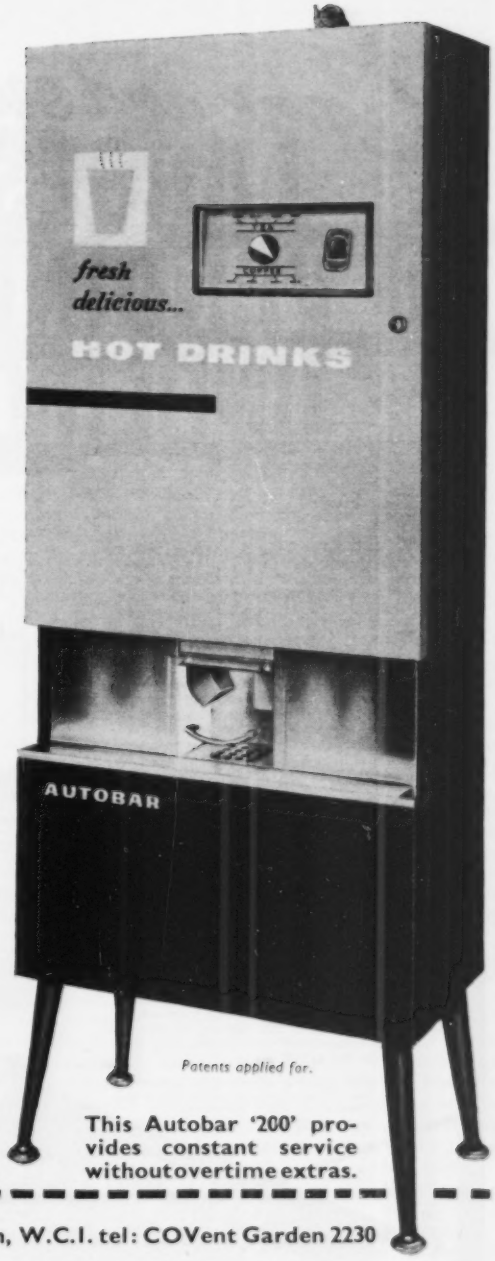

PERFECT TEA, COFFEE or HOT CHOCOLATE — DAY AND NIGHT

Employees stay on the job for their refreshment—**improves morale.** No wasted labour periods of 'Tea-boy'—**man-hours saved.** No labour needed for washing-up cups, saucers and spoons—**detergents,** hot **water and space saved.** Steaming hot beverages at any hour—day or night—each cup freshly made—served black/with milk/with sugar/or both. Wagons, hot containers, individual equipment for each beverage—and attendant, all become obsolete. **Constant cash saving.**

Patents applied for.

This Autobar '200' provides constant service withoutovertime extras.

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Please send full details of your Installation and Servicing for Factories of

THE AUTOBAR '200' HOT BEVERAGE MACHINE and the NEW AUTOBAR '650'

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Come and see the LARGEST RANGE OF VENDING MACHINES UNDER ONE ROOF

BAC RANGE Vending machines of all the leading makes—suitable for every location—are on *permanent exhibition* at the BAC showrooms in London. Nowhere else in the United Kingdom can you see and compare so many machines. Qualified BAC technicians are on the spot to explain, to demonstrate and to advise.

BAC 'PACKAGE DEAL' Another big advantage of buying from BAC is the 'package deal' you get when you buy machines of several makes. Whether you buy 1 or 100 machines, nobody can supply you cheaper than BAC.

BAC SERVICE *Before you buy*, BAC give you the fullest information on the basis of your own requirements—and the unique BAC Profitability Charts show you your individual profit potential from operating machines. *After you buy*, BAC technical assistance is available to you *—on machines of all makes*—for no more trouble on your part than a single telephone call.

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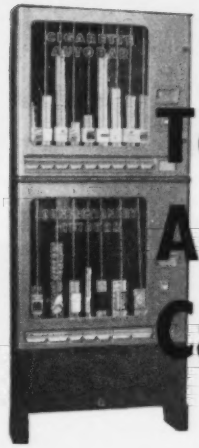
We shall be pleased to see you at our showrooms. Meanwhile, if you would like leaflets and further details, please ring or write to the Sales Director

AVMA

THE BRITISH AUTOMATIC COMPANY LTD.
14 APPOLD ST. LONDON, E.C.2
Telephone: BISHOPSGATE 8176



Sweets and cigarettes can be sold from this one machine

Towards the Automatic Canteen

by Bernard Sluman

WE have virtually caught up with the Americans in a field where, only one year ago, we imagined we were 15 years behind. The automatic-vending business is increasing at a pace which confounds even the manufacturers and operators themselves; and a walk through any town or a visit to any railway station will indicate that more and more vending machines are meeting the needs of the British public 24 hours a day.

The past year has seen a greater growth of automatic selling than any previous year, and it does not go unnoticed. For example, this new form of selling has been featured in a second leader in *The Times* predicting that this development will reach the proportions already achieved in the United States—within a very short space of time. *The Financial Times*, too, reports that manufacturers are finding it difficult to meet the demand for their machines. A recent issue of *Design*, journal of the Council for Industrial Design, devoted several pages to discussing the relative merits of various machine models.

But it should not be imagined that this intensified British interest in the sudden impact of these machines is confined to speculation: there are even more companies, many of them well known in other fields, who are entering the market. For example, Hawker Siddeley Group Ltd., noted aircraft manufacturers, and J. Lyons & Co. Ltd., the famous catering specialists, have formed a new joint company to enter the vending-machine business. Rank Precision Industries Ltd. have also launched their first automatic vendor which dispenses tea. Joseph Sankey & Sons Ltd. are widening their sphere of activities, hitherto devoted exclusively to milk-vending. These developments alone indicate that there is a prosperous future in the automatic-machine business. And as an indication of the accelerated and expanded growth of automatic merchandizing in this country, it is a subject which is already covered by the consultant.

Here to stay

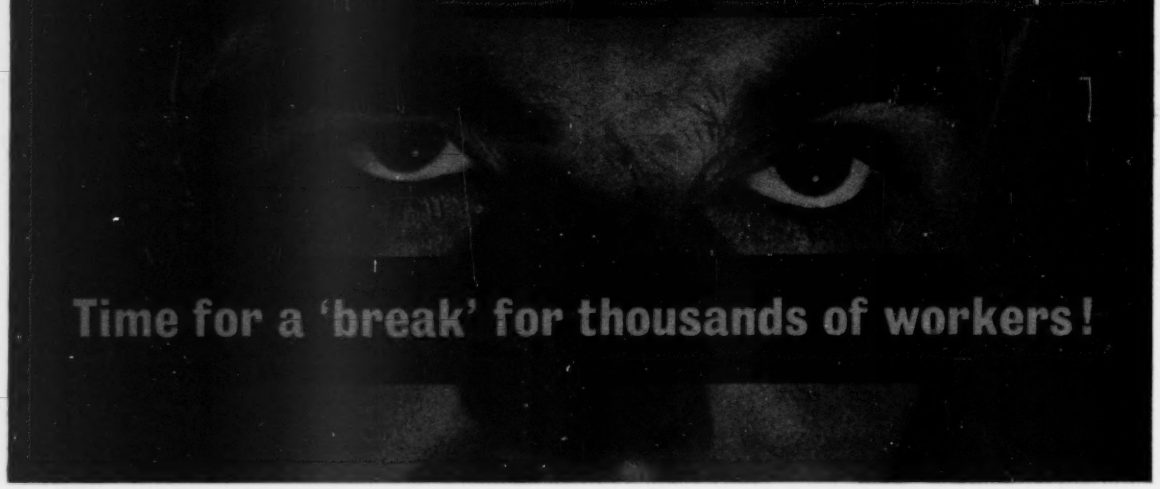
This year's Factory Equipment Exhibition witnessed an increase in the number of stands belonging to the machine-makers and operators. We have also had the very first International Vending Exhibition which was held in London at the beginning of the year. If this pattern spreads, and it surely will, we shall be offered an even greater range of products at the 1960 Factory Equipment Exhibition. This means that industry must, in order to keep pace with modern progress, be fully aware of the significance of automatic catering. It is obviously not a trend that is uncertain; we shall see within only a few years, a large proportion of industrial catering arranged through the slot machine.

Commerce has already given the lead: a completely automatic restaurant is operating in a Glasgow store. The general public has now become fully accustomed to buying occasional food and drinks from machines, and therefore it will be only a matter of time before they demand the same facilities in their work places. As an illustration of the power and impact of the vending machine we should consider the facts, which are startling. Last year, Joseph Sankey predicted that their milk machines would sell nearly two and a half million gallons of milk: at the Dairy Show this year they were pleased, and amazed, to announce that sales had reached over three million gallons.

One of the reasons given for this one success is that the machines are capable of providing their service for 24 hours per day. And this is the feature that should undoubtedly appeal to many industrial companies who work throughout the day and night on various shift systems. At the moment, many firms conscientiously maintain a full kitchen staff to cater for the night shifts. This naturally involves them in extra wage costs which they are showing signs of wishing to avoid. If automatic machines are installed, it is a simple job for canteen staff to fill them with sufficient stocks of food, snacks and drinks to meet the all-night demands.

Of course, it would not be an economic proposition for these machines to be used only during the night. Therefore, they could well be included in the normal, day-time catering arrangement. Mr. A. C. Strike, sales manager of W. M. Still & Sons Ltd., maintains that this scheme is probably one of the best propositions that vending-machine makers and operators have to offer. He quotes the large numbers of factory sites where workers are obliged to travel long distances inside the factory in order to get a meal or drink from the canteen. By placing a number of machines at various vantage points in the remoter parts of the factory, management can save itself and its workers a vast amount of time and money. These machines can now provide full-scale hot meals comparable with the traditional fare of the industrial canteen. For instance,

It's 2 A.M.



Time for a 'break' for thousands of workers!

Does a 24 Hour Canteen Service give you problems?

It need do so no longer, for the Ditchburn Hot-Spa Drink Vending Machine can serve a cup of tea or coffee every seven seconds ROUND THE CLOCK . . . AUTOMATICALLY to a capacity of 600 cups with each filling, in a floor space of only 2ft. x 2ft. More than that, Hot-Spa means goodbye to messy urns and trays. Goodbye to those annoying delays before, during and after the tea-break.

Ditchburn Hot-Spa and Cole-Spa give a choice of seven hot or cold drinks served speedily to a consistent quality in hygienic disposable cups. Because of this, and their record of reliability, Hot-Spa and Cole-Spa are the most-used drink vending machines in the world.

If you wish, you can have all-in service too, service that ensures a constant supply of refreshing drinks with no trouble to management or staff—the operator deals with everything. Why not write today for details, it's as simple as that!

HOT-SPA A fully automatic machine supplying a choice of seven delicious hot drinks—tea or coffee four ways, with or without milk, with or without sugar, plus hot chocolate and soups.

COLE-SPA The twin machine to the Hot-Spa, but serving a choice of seven refreshing ice-cold drinks such as orange, lemon, lime and cola, both sparkling and "still".

You simply dial your choice, insert a coin and the rest is pure enjoyment.

DITCHBURN

To DITCHBURN VENDING MACHINES LTD.,
Dock Road, Lytham, Lancs.

Please send me a copy of "Automatic Vending—The Ditchburn Way," and full details without obligation.

Name .....

Address MPM/1

DITCHBURN VENDING MACHINES LTD., A member of the Ditchburn Organisation

CONTINUED FROM PAGE 33

a typical meal that workers might purchase, at this time of year, could comprise soup, mashed potatoes with sausages or steak and kidney pudding, followed by tea or coffee.

In the smaller works, there are obvious advantages to be gained from using vending machines for the whole of the firm's catering. In these factories, space is probably at a premium; money too that would have to be found for the vast amount of kitchen equipment would be automatically saved; and, probably most significant, wage costs for the chef, assistant chef and various kitchen and servery hands would be considerably reduced. Added to this, we should remember the alarming current shortage of industrial catering staff. As Mr. E. C. Gezzele, catering officer for the London Transport Executive, remarked recently: "The majority of people in the catering industry at present realize that there are so few entrants to the profession that any assistance is worthwhile." This indubitably applies to works of every size.

Personnel managers, better than anyone else, will see the advantages of vending machines as their installation affects current production problems and as they are related to human relations. For example, there is no doubt that management is growing increasingly alarmed by the pressure being applied by the workers for a reduction in working hours. They are also aware of the difficulties that arise from their granting this reduction, if production cannot in some way be increased at the same time. Almost all machine manufacturers—and Mr. Horner of the British Automatic Company among them—maintain that the automatic machine can make a valuable contribution to the solving of this problem.

One of the biggest time-wasters in the modern factory, no matter what its size, is the set tea and coffee break. Everyone knows that the ten minutes normally granted, morning and afternoon, can account for a loss in production time over the day of anything up to 40 minutes. The extra time lost is caused, in the main, by workers anticipating the break, preparing for it some five minutes beforehand, having to wait a few extra minutes for the trolley to arrive, or walking various distances to a central canteen, and then having to wait their turn in a queue. Firms that have already installed automatic machines throughout their premises are saving much of that time by making tea or coffee available at any hour of the day, close to the work benches. They have also been able, once again, to reduce the catering staff required to deal with large numbers of workers requiring a drink, since vending machines need only a fraction of the staffing and, of course, need no one to be present to dispense the beverages. A wider choice too can be made available: there are machines that vend tea and coffee, with or without milk and sugar, plus a choice of soups for consumption during cold weather.

Production aid

One might question the necessity of having a tea break at all. In answer to this, we must acknowledge that the vast majority of firms have allowed this since the war and would encounter great difficulty in refusing it. There is the classic example of a Cambridgeshire firm which set up its factory on a remote site and gave no breaks other than the standard lunch - hour. This worked well until other companies arrived in the area who allowed the normal time off for refreshment, although their working day was longer. Workers in the first factory demanded that they be given breaks in the morning and afternoon, but were unwilling to have time added to the normal working day. The firm was unable to meet this request, until they installed several vending machines which enabled them to keep time-wasting to a minimum and to maintain production.

Far from disrupting production, it is possible to boost output by installing beverage and other machines and by doing away with the normal, set break. Peter Merchant Ltd., catering contractors, provide us with a useful illustration of this point. In a nylon-stocking factory, it was found that 90 per cent of the items rejected by inspectors were worked on in the periods immediately preceding the tea and coffee breaks. This was attributed directly to the graph of production, common in many factories, where workers consistently begin to flag before tea breaks, before lunch and before finishing for the day. Production can normally be expected to rise as soon as the workers have taken some refreshment. Therefore, it was suggested to this management that vending machines might be installed to replace the tea trolley. An agreement was reached and immediately the number of rejects fell. In other words, one of the great advantages of automatic selling of beverages at any time is that workers can take their refreshment as soon as they feel the need for it, so that it acts as a stimulant at the time when they are most in need of it.

If we accept these facts, then we must equally heed a word of warning from Mr. Strike: "If you install beverage machines for the mid-morning and afternoon breaks, it is important that you offer the complete service in the same way." Needless to say, there would be no time-saving factor if, having bought their tea from a machine, workers then had to wait for a roll or some other snack that was being delivered on a trolley or which they had to buy from a distant canteen. The machines are now available, says Mr. Strike, which will enable management to give the complete service: hot or cold snacks, chocolate and other sweets, drinks, biscuits, cigarettes, etc.

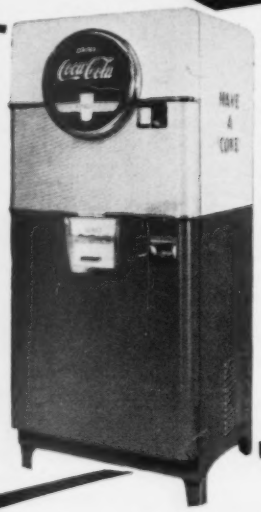
Over and above the advantages that have been expounded already, there are many others which do not always come within the scope of the personnel manager's consideration. For example, although some personnel managers are directly responsible for canteen costing, this would (in ideal circumstances) be left to the catering manager. It would be for him to appreciate the benefits of having complete control over the financial transactions carried out by a machine without possibility of human error. He, too, would recognize the blessing of being able to keep positive records of the sales of meals or drinks as dishes on a menu rather than as separate portions.

The personnel manager must concentrate on the human implications of installing mechanical feeding facilities; its contribution to forming part of a scheme for increasing production; the benefits of making more time available to employees for leisure pursuits, without offering top management reduced output. And it must surely be the personnel manager's duty, seeing the whole living picture, to persuade management and men to accept this kind of progress in industry, when they have probably all accepted it in their private lives.

TYPICAL VENDING EQUIPMENTS ARE PICTURED ON PAGE 37

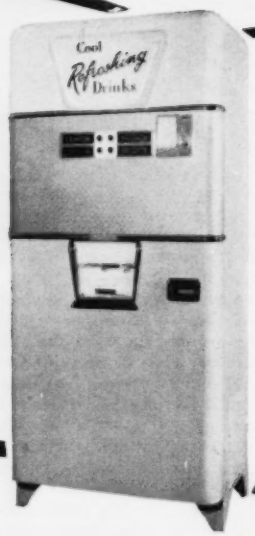
BETTER DRINKS . . .
BIGGER PROFITS *with* . . .

CHADBURN
PRE-MIX
CUP VENDOR



Capacity: 600 cups; Cabinet: Zinc-coated, corrosion-resistant steel. Illuminated slogan plate. "National" coin selector. A.C. mains 230/250 volts. 50 cycles. 33" x 28" x 74".

CHADBURN
POST-MIX 4-FLAVOUR
CUP VENDOR



Capacity: 600 cups. Selection: 3 carbonated, one plain. Cabinet: Zinc-coated, corrosion-resistant steel. Illuminated slogan plate. "National" coin selector. A.C. mains 230/250 volts. 50 cycles. 33" x 20" x 74".

Chadburn Pre-mix and Post-mix machines offer the best of both worlds in automatic vending for factories, railway stations, dance-halls, schools—wherever people collect. Multi-flavour Post-mix to satisfy all tastes, or factory-fresh Pre-mix at its peak of palatability are available in the unique Chadburn range of cup vendors.

Your most important locations deserve Chadburn installations . . . your customers will like the better drinks—you'll appreciate the bigger profits.

Supplied direct from the manufacturers—

CHADBURNS (LIVERPOOL) LTD

VENDOR SALES DIVISION · PARK LANE WORKS
BOOTLE 10 · LANCASHIRE

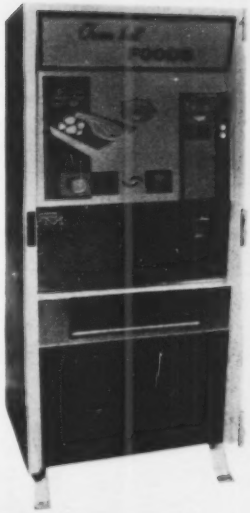
Telephone: Aintree 4155 Telegrams: Chadburns, Liverpool

MEMBERS OF THE AUTOMATIC VENDING MACHINE ASSOCIATION

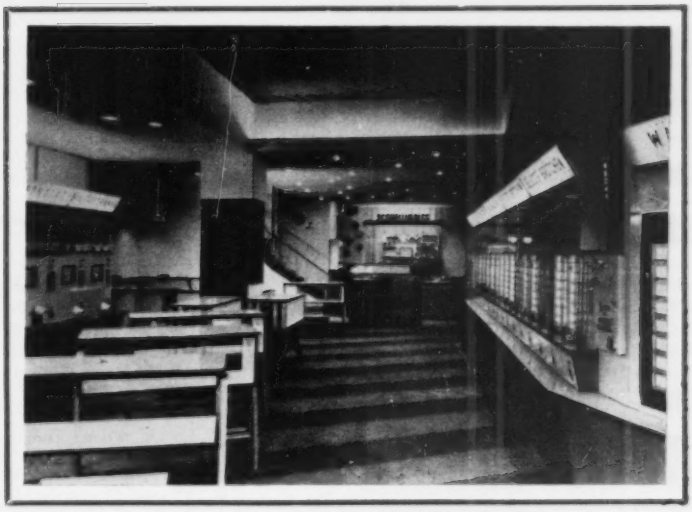
CONTINUED FROM PAGE 35

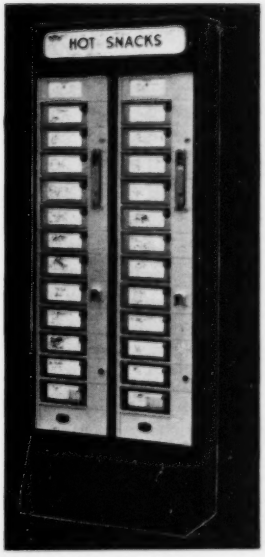
The 'COLE-SPA' and 'HOT-SPA': these two machines (Ditchburn Vending Machines Ltd.) present the choice of 14 separate drinks—7 hot, 7 cold. The combined capacity is 1,380 cups.

The 'HOT FOOD' automatic merchandizing machine, supplied by W. M. Still & Sons Ltd., has a fully automatic timing system which keeps food between 32-40 degrees until meal-times, when the food is heated or cooked to a pre-set temperature which is maintained throughout the period required.



The 'Quick' automatic restaurant in Berlin is equipped with a complete range of food and drink machines. Hot meals are provided, on a conveyor-belt system, to 32 of the installation's compartments. Distributors in the U.K.: Berend Automats Ltd.





Snacks can be served 24 hours a day from this machine which incorporates variable temperature-control electric hot-plates in each compartment. Several models can be built up to provide a complete battery, and other models are available for cold snacks and other items. The machines are obtainable from the British Automatic Company Ltd.

The Supreme Vendor makes tea from leaf, water and fresh milk, and has a capacity of 500 cups. In thirteen seconds it will dispense a cup of hot tea brewed to the individual requirements of each customer. The machine is manufactured by the Gloster Aircraft Company Ltd., and marketed by B.A.C.

HELP YOUR STAFF TO HELP THEMSELVES

Looking after staff welfare plays a big part in modern management. This means that canteen and meal-break facilities are very much your concern. Whether your firm maintains a full canteen service or just provides staff recreation rooms, the installation of Sankey Vendo automatic machines will add to the comfort and convenience of factory and office working conditions.

A complete Canteen or Canteen Aids

The Sankey Vendo Milk Vending Machine is one of a range of automatic machines which will dispense a selection of hot beverages, ice cold-drinks in cartons, cups and bottles, ice-cream and chilled foods etc. Install one now and discover for yourself its advantages. Quick automatic, self-service — a special saving on night shifts, when even a skeleton canteen staff is costly. A 7 day week of 24 working hours a day without supervision. Time saving for quick drinks on the job. When its companion machines become available, you can build up a whole self-service canteen.

The Sankey Vendo Milk or Soft Drink Vending Machine is Refrigerated

Fully loaded, it holds 210 ½ pints of ice cold milk, plain or flavoured, and orange drink. It is coin operated, dispensing cartons automatically. Loading and servicing are quickly and simply done; overhead costs are remarkably low.

Height: 77½
Width: 37½
Depth: 28"

Vendo

MANUFACTURED UNDER LICENCE BY **Sankey** OF WELLINGTON

A member of the Automatic Vending Machine Association.

Full details from:

Joseph Sankey & Sons Ltd., Vendo Division, Hadley Castle Works, Wellington, Shropshire. Tel: Wellington 4321. Telegrams: Sankey, Wellington.

Discussion Leader

Raw materials for decision-making

A NEWLY appointed personnel officer writes to me from Leeds. He says: "My appointment as personnel officer is the first one in this firm. But two people have been doing part of the personnel function here for many years: both are elderly. One is a trained nurse and has looked after the health and some aspects of the welfare of the employees. The other is a man in his middle fifties who has done the recruiting and engaging of hourly-paid workers for the past twenty years. I am not too worried about the nurse, but I should like to introduce modern methods of selection based on job analysis and job specification. I feel, however, that I would never make much progress while this man is doing the selecting, as he has his own methods built up over many years of habit. What do your readers advise me to do about this? I am most undecided."

Men of judgment

The ability to make decisions and carry them out is perhaps the most important single ability which a successful manager must possess—yet many managers lack it. If we think for a moment of our own organizations, we can pick out those people within the management hierarchy who are prepared to make decisions. These people are not necessarily the obvious ones to go to if we study the formal organizational chart (indeed, some of them may not have a formal managerial function at all). But if we want to 'get something done,' we turn at once to a man of this type: "he will think of a way round it somehow," we say to ourselves.

Other members of the managerial team may be technically competent, wise and kind, but when it comes to making a decision, they become indecisive and procrastinating, or pass the job on to someone else. One writer goes so far as to say "Such men are a menace in business, they can paralyse the progress of an institution. When discovered, they must be removed at whatever cost in human discomfort. Only major surgery will do, even if the chairman has to fire his best friend." However, before we contemplate such drastic steps, we should ask ourselves whether this "lonely art of decision-making" can be taught? Is there one kind of human relations climate in which subordinates feel confident to take responsible decisions and another kind of atmosphere which inhibits action of this kind?

I think that we can learn a lot about this art but, as with all human relations skills, an analysis of the process of decision-making is the first step. The basis of wise decisions is the knowledge of sufficient relevant facts. Often these facts have to be collected. The decision-maker must therefore learn how to analyse a problem so that he knows what facts to look for. He must learn to ask the right questions. He should be unbiased enough to see the facts not through the coloured or slanted spectacles of his own prejudices, but as they really are. He should be able to distinguish a fact from an attitude, a feeling or a prejudice, when it is given to him by another person. All these related skills can—at least in part—be taught and practised, either in a training situation or as part of the daily routine.

Secondly, the decision-maker has to weigh the significance of the material he has gathered. A broad outlook, a grasp of long-term essentials, a sifting of the relevant factors—all are required at this stage. Thus an engineer might make a sound decision on technical grounds which might still be inadequate in terms of human values and human satisfaction. An accountant might make a decision which looked financially sound but failed to take engineering aspects sufficiently into account.

One very real problem for the busy manager is time. It is easier for all of us to make a sensible decision if we are not under pressure. But too often a snap decision has to be given. The ability to make a quick review of all the available evidence is still another skill which requires practice.

Many managers are capable of making decisions for themselves, but many others could be encouraged to do so, if their sense of security and self-confidence could be strengthened. The 'climate' of relationships between a manager and his subordinates is all-important here. A top manager, very good at making decisions himself, often finds it difficult to delegate responsibility to subordinates and to refrain from criticism if things go wrong. It is then tempting for a subordinate to shelve a problem rather than run the risk of failure.

Who give decisions in your firm? What is the diplomacy affecting ruthless decisions? How is 'the lonely art' developed?

A guinea is paid for each letter published.

We were discussing joint consultation in the October issue of the journal. It is perhaps in this sphere that joint consultation can play its most useful rôle. If meetings are held regularly within the ranks of management, particularly between ranks which are not too far apart in status (three levels is perhaps the maximum), each manager learns what the others are thinking. Particularly if the right lead is given by the senior manager, each individual gains support from the feeling that he belongs to a group, in which all members are working together for a common purpose. His views and ideas are valued by the rest and he feels encouraged to stand on his own feet. In addition, communication lines are unblocked and he is in a better position to make sensible decisions because he is in possession of more facts. Such consultation can often take the form of a committee called together to take collective decisions.

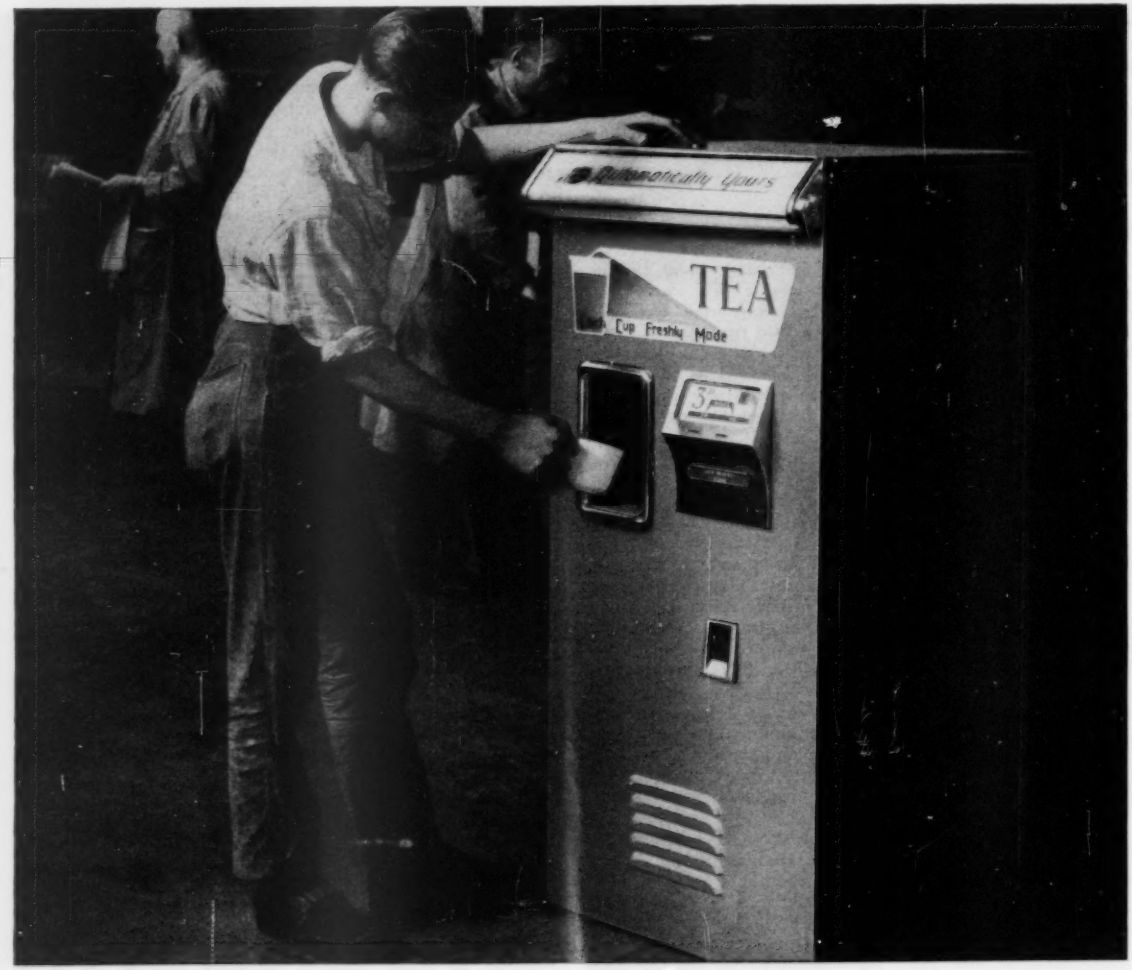
I should have known . . .

I was being shown round a large factory in the Midlands the other morning when I became aware that there was something missing . . . something different. In the course of my work I visit hundreds of factories a year and have developed an instinctive sixth sense for things—atmosphere, noise, layout—little things you only notice subconsciously. I began checking in my mind. Tools, first-aid notices, bench litter, trollies — TROLLIES, that was it! No one had pushed past with a 'mind your backs, please,' there'd been no little knot of workers round the tea trolley. I looked again—yes, there were no chipped mugs on the benches either. I asked the works manager who was showing me round.

"Come over here," he said, leading me over to the corner of the shop, "there's our new idea."

There stood a smart, attractive-looking automatic tea machine and, as I watched, several workers strolled over, inserted a coin and received a neat, hygienic cup of fresh tea—I can vouch for the freshness—I had a cup! During the time I was in the shop between twenty and thirty workers helped themselves—no queueing or waiting for change, no hold-up in production either.

Seeing the name on the machine—STILL'S—I realised I should have guessed earlier. Still's, the pioneers of automatic vending machines, were keeping morale and production high.



By Appointment to Her Majesty The Queen.
Manufacturers of Kitchen Equipment.

For further details write to :
W. M. STILL & SONS LTD.
29/31 Greville Street, London, E.C.1. Tel.: HOLborn 3744

RIGHT SIDE OF THE LAW

by COUNSEL

Group accident policies and fidelity insurance

THIS subject has many significant aspects even if the various State schemes are left out of account so that, in this article, only two will be noticed: fidelity insurance and the situation that may arise when an employer takes out a personal accident policy for the benefit of a group of employees.

With fidelity insurance, the major consideration is the nature of the employee's work and his opportunities for and the possible scale of dishonesty. Generally, therefore, the employer must give full details of the duties involved.

Thereafter, two points should be kept in mind. There may be a change of work, or there may be changes in the duties such employees are required to perform, either temporarily or permanently. For example, without any change of post being involved, an employee may be called upon (perhaps during holiday periods) to undertake substantially greater financial responsibilities from time to time. Unless this is carefully watched, it may be found that the insurance company will be able to disclaim liability should any claim arise. Simple routine alterations and changes of procedure would not usually affect liability under the policy unless, of course, as is often the case, the policy specifically prohibits them.

Time clauses

It is important to note that the loss, so far as the insurer is concerned, takes place when the property is stolen, not when the loss is discovered. Therefore, any thefts committed before the policy was taken out, but discovered during its currency, will not be covered. Equally, losses arising during the currency of the policy can be recovered even if they are not detected until it has expired. However, this is always subject to the terms of the policy which may provide otherwise.

The employer who merely suspects dishonesty need not give notice to the insurers until he has satisfied himself that it has been committed. But it should be carefully considered when making investigations whether there is any time limit within which losses must be notified.

Insurers paying out under a fidelity policy are entitled to be credited with any commission or salary to which the employee himself would have been entitled, but for his dishonesty, and with any money of the employee which the employer holds. They are also entitled to the benefit of any securities or guarantees which may be available to the employer. Finally, it should be remembered that such policies sometimes contain a clause requiring the employer to prosecute, usually at the insurance company's expense, and if there is a failure to do so the policy may be avoided.

The Fatal Accidents (Damages) Act, 1908 provides that "In assessing damages in any action . . . there shall not be taken into account any sum paid or payable on the death of the deceased under any contract of assurance or insurance. . . ."

The meaning of these words has recently been considered by the Court of Appeal in *Green v. Russell, McCarthy (3rd Party)*. The facts were as follows: Russell, an architect, had an employee named Green. In 1951 Russell took out a group accident insurance policy with the Yorkshire Insurance Company to cover certain members of the staff, including Green. The policy described Russell as the "insured" and named the employees in question as "insured persons." It declared that "the company shall be entitled to treat the insured as the absolute owner of this policy and shall not be bound to recognize any equitable or other claim to or on the policy and the receipt of the insured . . . above shall be an effectual discharge." The employees knew of the policy but it formed no part of their conditions of employment. There was nothing to show that it affected them as to giving notice or asking for salary increases. Nor was Russell under any obligation to maintain or renew the policy. In 1955, there was a fire at Russell's office which caused the death both of himself and Green and, as a result, £1,000 became payable under the policy because of Green's death.

This sum was paid over to Green's estate but a claim was made against Russell's personal representative, and agreed for £1,300, for damages in respect of Green's death by Green's administratrix. The question then arose whether the £1,000 paid over under the insurance could be deducted from this sum of damages. Russell's personal representative argued that, when the payment was made to him in that capacity by the insurance company, the payment under the contract of insurance was thereby exhausted. The subsequent payment to Green's representative was purely voluntary.

Employer's risk

After considering the policy in some detail, their Lordships declared that, in their view, the administratrix of Green's estate had no enforceable right to the payment in law or equity. Nor did the terms of the policy create a trust. Green, the deceased, was not a party to the contract of insurance; nor did the mere intention to provide benefits create a trust. However, their Lordships took the view that the words of the section covered payments made under insurance contracts for the benefit of employees, even if they had no legal right to receive the payments and that the words in the section were descriptive of the sum itself. Accordingly, under the Act, this payment could not be taken into account so as to reduce the damages payable.

This decision makes it clear that such arrangements are entirely valueless to an employer who may be concerned to provide against possible claims for damages for accidents to employees at work.

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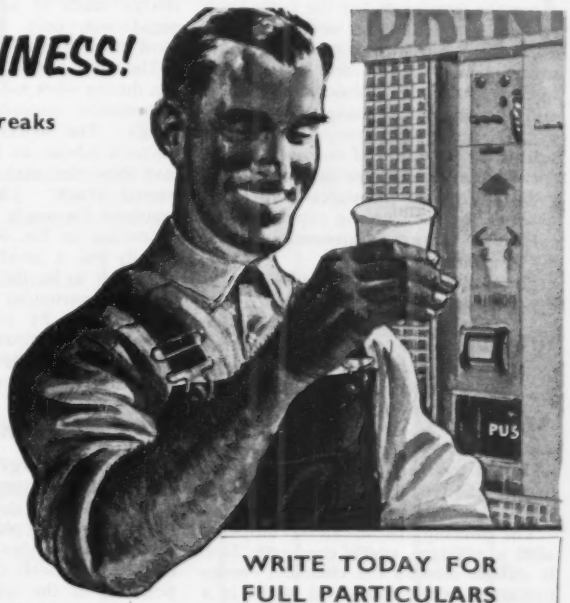

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by Dr. E. E. Lieber
MEDICAL OFFICER, MICROCELL GROUP OF COMPANIES

Nutrition

The ergonomics of table-talk. How to calculate the human machine's energy consumption, plan its economy, check excesses and achieve satisfaction

IN many industrial undertakings, it falls to the personnel manager to make provisions for the right kind of food in the staff and works canteens, because it is now widely recognized how essential an adequate mid-day meal is to an individual's efficiency. In France and Germany, they have gone a step further, and the government itself subsidizes the provision of nutritious meals for workers at very low prices.

The following principles have to be observed by the catering expert:

(1) The energy requirements of the worker

(2) The therapeutic requirements in disease states such as gastric or duodenal ulcer, or other digestive disturbances: this is because the calorie requirements are affected by muscular activity and intestinal function.

What are the food requirements of the manual worker? In other words, what are the best foodstuffs for maintaining the efficiency of the body at work?

The working muscle can be compared with a machine which consumes fuel. It utilizes directly the chemical energy contained in the food, and works in a manner comparable with machines used in industry, but in an extraordinarily economical way. Only a few of our industrial machines reach the efficiency quota of muscle which uses and transforms into work 25 per cent of the energy taken in with the food, compared with only 10 per cent for a most efficient machine.

The study of the consumption of oxygen during work will, of course, give us information concerning food requirements. The working man needs the doctor's advice as to what to eat far less than the man who suffers from mental strain. The manual worker regulates his needs, for the most part, according to his own instinct, as he usually has a good appetite. Hunger is known to be the best relish. If we study the particular types of food eaten from choice by persons of different classes and occupations, we find that, in general, consumption agrees with the theoretical requirements.

Weights and measures

The total energy consumption of a normal, healthy man at rest is about 2,000 calories a day. That of a man doing exhausting physical work is about 5,500 calories a day. Within these limits there are all sorts of variations corresponding to the quality of the work done (*see Table* I).

Work which is often believed not to be very exacting—e.g. that of a typist—nevertheless may require more food energy than certain apparently more exhausting occupations. Surprisingly enough, very little energy is consumed during mental work. It has been calculated that 10 hours' continuous exhausting mental work needs only as much energy as is contained in a few lumps of sugar. While little is known on this subject, one may assume that the single nerve cells of the brain and nervous system use, during the stimulation which accompanies mental work, an amount of energy which is large in relation to the size of the individual cell, but small in relation to the total cell mass of the body.

The mental worker often feels a strong desire for meat or other protein foods. This is easy to understand as he has little need of calories in general, since his energy requirements are small. Were he to satisfy the whole calorie need with bread, for instance, he would require about two pounds of bread a day; and this would contain only 40 grammes protein, whereas he needs a total of about 80. Consequently, he must eat food richer in proteins. The ideal food for him, is meat or other foods rich in protein, like cheese, soya beans, etc. These considerations are instructive for everyone with small calorie needs, e.g. all sedentary workers.

Of what foodstuffs should the diet of

a man engaged in physical work consist? The methods used to determine this are:

(1) Investigation of the substances consumed by the body during work

(2) Examination of the composition of a voluntarily chosen diet of working people. This latter method is not very exact, but it suffices for practical purposes.

During physical work, first the carbohydrates and their storage depots in the body, then the fats, and lastly the proteins are disintegrated for energy purposes. But it would be erroneous to conclude from this that carbohydrates must constitute the main food energy source for the working man. It should be remembered that the energy need during work may, in the absence of available carbohydrates, be satisfied by protein and probably by fats. There is nothing particularly satisfying in carbohydrates. Yet extensive enquiries have proved beyond doubt that the protein need is not increased in working people, since any excess of energy required is made up exclusively by carbohydrates and fats. Fat easily spoils the appetite, and carbohydrates or even vegetables overload the intestinal tract if taken in such quantities as to represent the total energy required.

Investigation shows that working men if given a choice of diet, do not eat much more protein than is necessary for their metabolic requirements. Any further energy needed is satisfied by a higher consumption of fats and carbohydrates (see Table II).

The healthy system accommodates itself to prolonged effort in different ways: this is called training. The trained man needs a minimum effort to reach a maximum of mechanical effect. The arm movements of a healthy man lifting a heavy weight give rise to unnecessary movements in other parts of the body for the purpose of getting the desired effect. In the trained man, this does not happen and, by avoiding useless accompanying muscular movements, energy is saved. Another effect of training manifests itself in the muscle tissue which uses the energy in a more economical way. The quantity of circulating blood available for the working muscle is of great importance and, when work begins, rises much faster in the trained muscle than in the untrained.

Training represents a sort of protection for the body which is trying to work in the most economical manner and, during recent years, a great branch of medical science has been developing with a view to aiding Nature's efforts.

TABLE I CALORIE REQUIREMENTS

1st Group	**Sedentary Occupations** Book-keepers, Clerks and Mental Workers	2,200-2,400 calories
2nd Group	**Sedentary, light manual work** Tailors Light Mechanics Printers Teachers	2,600-2,800 calories
3rd Group	**Medium Manual Work** Shoemakers Mechanics Bookbinders Doctors and Postmen Laboratory Workers	Approx. 3,000 calories
4th Group	**Heavier Manual Work** Dock Labourers Metal Workers Painters Carpenters	Approx. 3,400-3,600
5th Group	**Heavy Manual Work** Soldiers (4-5 *stone pack* + 5 *hours march*) Agricultural Labourers	4,000 calories and over
6th Group	**Heaviest Manual Work** Tree Fellers	5,000 calories

TABLE II

Additional foodstuffs needed by workers in the occupation groups given in Table I. The figures represent the percentage required in excess of basic metabolic needs.

	Calories %	Proteins %	Fats %	Carbohydrates %	Salts %	Vitamins %
Group 1	2,000-2,400	100	130	160	100	100
Group 2	2,600-2,800	110	160	210	100	100
Group 3	3,300-3,500	115	180	260	100	110
Group 4	4,000	120	200	300	100	115
Group 5	Over 5,000	130	260	400	—	—

The physiology of work is of importance in relation to practically all those branches of medicine, biology, hygiene, and bio-chemistry which are concerned with the modification of suitable working methods, the improvement of factory conditions, advice on correct selection and other problems concerned with the greatest possible saving of energy. Naturally, a problem of such magnitude is of the highest importance as far as national welfare is concerned.

Sections of modern industry owe many of their achievements to the applications of the results of this science. It is obvious how important is this computation of the energy needs and nutritional requirements of the working man. Nevertheless, it is very difficult to determine, from the data alone, the exact work effect expressed in energy and which food is the most appropriate in composition. Individual factors, such as propensity to fatigue, play a large part; the accounts for the fact that the rate of working is of great importance in relation to diet. Generally speaking, people who work to a clock consume more energy.

Obviously, the personnel officer who will be dealing with practical problems of industrial nutrition will have to bear in mind the following:

(1) **Education of the workers.** Sometimes we have food prejudices which have to be overcome. An explanation of a proper diet must be given to the worker, by means of talks, leaflets, etc.

(2) **Education of those who prepare food.** The average housewife has little understanding of the various food values, but those responsible for feeding large numbers should be aware of their importance.

(3) **Older workers present special dietary inadequacies,** which should be catered for.

(4) **The management must be informed** on the subject of nutrition as applied to industrial workers, and insist upon well-qualified cooks and caterers.

Many people eat to excess. No person should eat to such an extent that he feels his stomach really full. As soon as he has taken in sufficient food to provide the necessary energy and to repair tissue wastage, he should endeavour to observe the signal that is normally given to him and stop. Over-eating may have more harmful effects than too little.

The further the culture of a nation progresses, the greater is the tendency to over-step the normal bounds of minimal nutrition, which lies very near to the optimum food requirements. Everything in excess of the body's needs is either stored or excreted as valueless; otherwise intestinal and metabolic disturbances of every kind may be caused. The sense of satisfaction which indicates to the normal person when the body has just sufficient food is, therefore, an important mechanism of nature.

Everything that increases the appetite and taste will increase the digestibility of the food. It cannot be over-stressed that, for good digestion, our food must satisfy the eye as well as the taste. The most carefully planned and composed diet can be ineffective if presented on a badly prepared or dirty table. It has been shown that of two meals of equal calorific and chemical value prepared in different colours, the white one produced a sense of complete satiety much sooner than the red one. Many persons lose their appetite as soon as they look at a plate too abundantly heaped with food. Therefore, the mode of preparing food, its composition and quantity, and its presentation play an important part in digestion.

The satisfying capacity of many food substances such as meat, broth, milk and fish, depends directly on the quantity eaten, whereas in other food substances there is no such connection as, for example, potatoes, butter and bread. However, their satisfying capacity is almost constantly the same. Meat has the highest satisfying capacity of all our foodstuffs; next on the list comes fat, whereas the carbohydrates do not display any high value. This has secured for meat an exceptional position in our diet. Statistics show that the consumption of meat has steadily been increasing for the last 60 years all over the world. In the United States, from 1910 to 1927, the annual meat consumption had been increased by one-sixth. Similar increases are found in other countries. This is certainly owing to the development of industry, and long journeys to and from factories make it necessary for workmen to eat as few meals a day as possible.

Meat, with its great satisfying capacity, is the most suitable food of all. It reaches its highest value only in combination with flour, fats and vegetables or other foodstuffs. The optimum combination is as follows: first, a soup of appetizing taste and smell; then meat and vegetables followed by a sweet dish. Obviously, that corresponds exactly to the average principal meal which was eaten by many—even before the science of nutrition came into existence.

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Safety

RADIATION SERVICE

AIMED to help industry to achieve the requirements of the Factories (Ionising Radiation) Special Regulations, a new commercial radiation monitoring and tracer service has been launched. The comprehensive facilities which they provide can be broken down into three groups.

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Group 3 allows for the carrying out of tracer experiments by skilled personnel without the need for purchasing the complex equipment involved. It has been designed to meet the needs of industrial and scientific research establishments.

Enquiry Ref. No. S12/1

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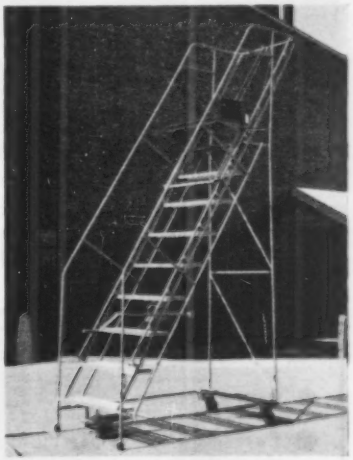
IN addition to their normal range of Mountie safety steps, the makers design and produce lightweight steel and aluminium steps and platforms to suit specific requirements. A recent 'special' incorporates a front-elevating shelf, which lifts loads of 250 lb from near ground level to the top of the handrail. It is raised and lowered by a self-sustaining winch, operated from the ground. One of the main



advantages of this system is that, with only one operator, goods can be 'on' and 'off' loaded at the required height from either side, thus enabling the steps to be used in confined gangways. Mountie models can be supplied with elevating shelf and from eight to 12 steps. They are all fitted with the standard 'Treadlock' anchorage to prevent dangerous movement when the steps are in use. The width at the base on all models is 2 ft. 6 in.

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Enquiry Ref. No. O12/3

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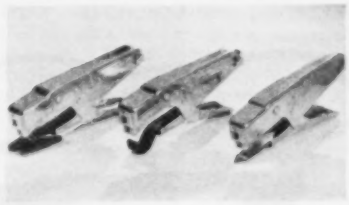

Individual applications and features of the three models are as follows:

Model A (left) has been designed for the pre-packaging trade. The twisted neck of the polythene bag can be inserted in the channel end of the anvil, securely sealed by forming a staple into a metal ring.

Model B (centre) incorporates a new type of anvil which enables the machine to be placed over obstacles such as the frame of a seat or the rod of a deck chair.

Model C (right) is a portable carton sealer. A spear in the front of the anvil can be quickly inserted under the carton flaps and turned left or right to staple the top flaps to the bottom ones. This model, as the others, is available for either fine or heavy gauge staples.

Enquiry Ref. No. E12/1

TABLE UNITS

STRONG and easy-to-clean: these are two virtues which the manufactures ascribe to their unit-constructed work table. Made with square-tube legs that have a slight radius on the

edges, it is hammer finished. The tops are available in a variety of materials according to requirement. Example: for engineering and allied trades, 1¼-in. thick, linoleum covered; for the pharmaceutical, textile and food trades, linoleum or plastic tops ¼-in. thick.

Adjustable feet are fitted to allow for inequalities in the floor. Units may be bolted together, end-to-end or side-to-side, to form any required working area (each unit is 2 ft. 9 in. square by 2 ft. 9 in. high).

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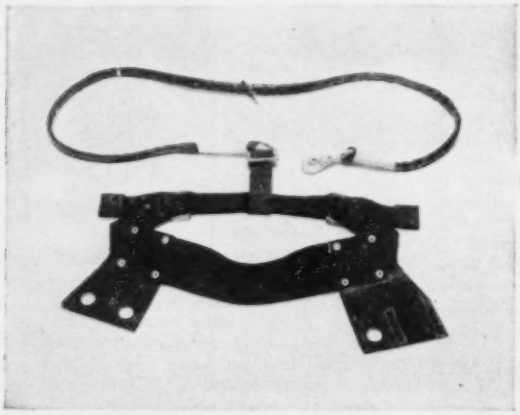

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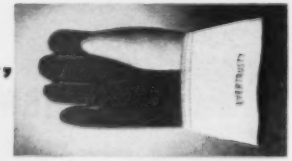

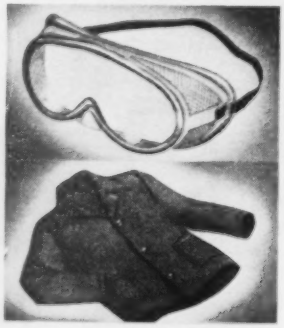

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charts, engravings, textiles and printed matter of all kinds, has just been placed on the market. Known as the 'Allen' M. 109, it consists of a spun-aluminium body (diameter 8 in.; height 6 in.), which has, fitted in the top, a 5-in. dia. optically corrected lens which gives an area magnification of 4X. The lens design gives true binocular viewing without distortion over the whole area and, claim the makers, without eyestrain after continuous use.

Lighting is provided by an 18 watt, 25 volt lamp, fed from the mains supply through a 'Dohm' safety transformer plug which fits a standard 3-pin mains outlet (3 models are available: 5, 13 and 15 amp). Finish: silver-grey hammer stove enamel outside, with white inside.

Enquiry Ref. No. E12/4

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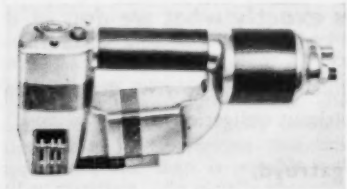

dial on the top of the tool. By pressing a button, the complete sequence of strapping operations is performed, from feed to cut-off, in three to four seconds. The 'Straplicator' is so designed that, at no time, is any part of the tool under the strapping, thus making the tool suitable for almost any shape of package. Three widths of strapping can be used on a wide range of gauges, although the tool itself is made in only one physical size. It weighs 7 lb.

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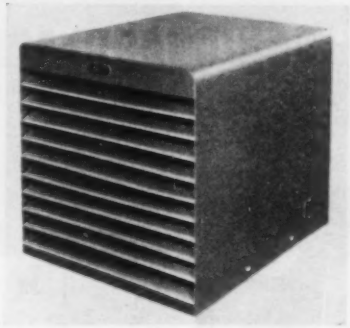

compact floor mounting, this unit incorporates a slow-speed fan designed to give the minimum of air movement with quiet operation. Both heating element and fan are protected by a sheet-metal case, and this assembly is itself totally enclosed in a sheet-metal, bronze-finished cover, with air inlet and outlet louvres. By using suitable switchgear, the fan only can be operated to assist ventilation in warm weather. Price: £54.

Enquiry Ref. No. H12/1

It is hoped that firms with new products for better and safer working in industry will continue to send details to the Editor. In this way we can maintain the news value of our comprehensive Equipment Market—and continue to assist the great number of our readers who are using this free Enquiry Service.

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IN the new 'Turbo-Static' air heaters, the makers appear to have introduced a significant advance in oil-fired heating. For example, in the combustion unit the proportion of air to gas oil has been considerably reduced—conventional heaters have a mixture of 20-25 lb. of air to 1 lb. of oil, whereas the 'Turbo-Static' mixture is 16 lb. of air to 1 lb. of oil.

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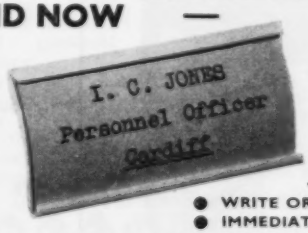

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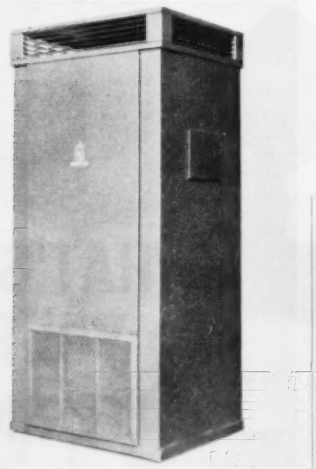

the outer stream—a barrier layer which prevents the flame from impinging on the chamber walls. Excess air is also reduced and this, in conjunction with the preheating of combustion air, makes it possible for temperatures of over 3,000 deg. F to be achieved throughout the chamber. At this temperature, every particle of oil-mist is evaporated so that 'sooting" is eliminated.

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Welfare

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OUR illustration shows some of the new-type pre-fabricated lavatory compartments installed at the Royal Albert Hall, London. Produced from a new plastic-faced material known as Plymel, the compartments are believed to be the only 'packaged' units of their kind especially designed for immediate erection in office blocks, hospitals and similar buildings. It is claimed that this introduction now enables architects to specify lavatory and shower compartments that cost appreciable less than is possible with other materials. An equally important claim is that the plastic surface substantially reduces annual maintenance costs by eliminating the need for repeated painting. Also, three compartments can be erected in eight hours.

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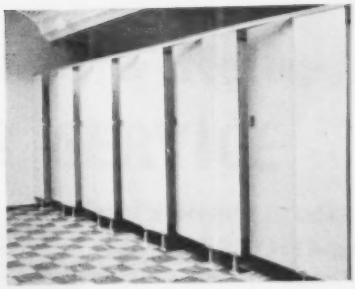

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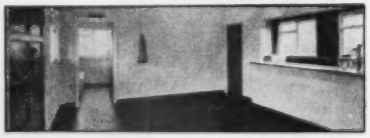

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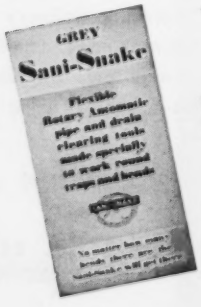

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Braby, Frederick, & Co. Ltd.
Harvey, G. A., & Co. Ltd.
Price Machine Guards Ltd.

SAFETY MATS
Nuway Manufacturing Co. Ltd.
Tyre Products Ltd.

SAFETY—MISCELLANEOUS
British Celanese Ltd.
E.M.I. Electronics Ltd.
Ferranti, Denis, Meters Ltd.
Irving Air Chute of Great Britain Ltd.
Normalair Ltd.
Security Products Ltd.

SANITARY DISPOSAL
Cannon Hygienic Products Ltd.
General Electric Co., The
Hygiene Paper Products Ltd.
Sugg, Wm., & Co. Ltd.
Wandsworth Electrical Manufacturing Co. Ltd.

SANITARY SUPPLIES
Peter's Automatic Machines Ltd.
Robinson & Sons Ltd.
Simplamatic Machine Co. Ltd., The

SERVICES
Gas Council
National Industrial Fuel Efficiency Service

SOUND ACOUSTICS
Cullum, H. W., & Co. Ltd.

SPORTS FACILITIES
En-Tout-Cas Co. Ltd.
Peel, H., Ltd.

STAFF APPOINTMENTS
Daily Herald

TIME RECORDERS
Blick Time Recorders Ltd.
Gledhill-Brook Time Recorders Ltd.

TRAVEL
Skyways Coach/Air Ltd.

VENDING MACHINES
Autobars Co. Ltd.
Automat Machine Sales Ltd.
Automatics Trading & Vending Co. Ltd.
Berend Automats Ltd.
British Automatic Co. Ltd.
Chadburns Ltd.
Ditchburn Vending Machines Ltd.
Machine Economy Sales Ltd.
National Automatic Machines Ltd.
Sankey, Joseph, & Sons Ltd.
South Western Automatic Co. (Bristol) Ltd.
Still, W. M., & Sons Ltd.
Stanton Automatics Ltd.
Vendepac Ltd.

WALL CLEANING MACHINES
Revvi Ltd.

WATCHMEN'S CLOCKS
Blick Time Recorders Ltd.
English Clock Systems Ltd.
Llewellins Machine Co. Ltd.
Thames Manufacturing Co. Ltd.

WELFARE FACILITIES
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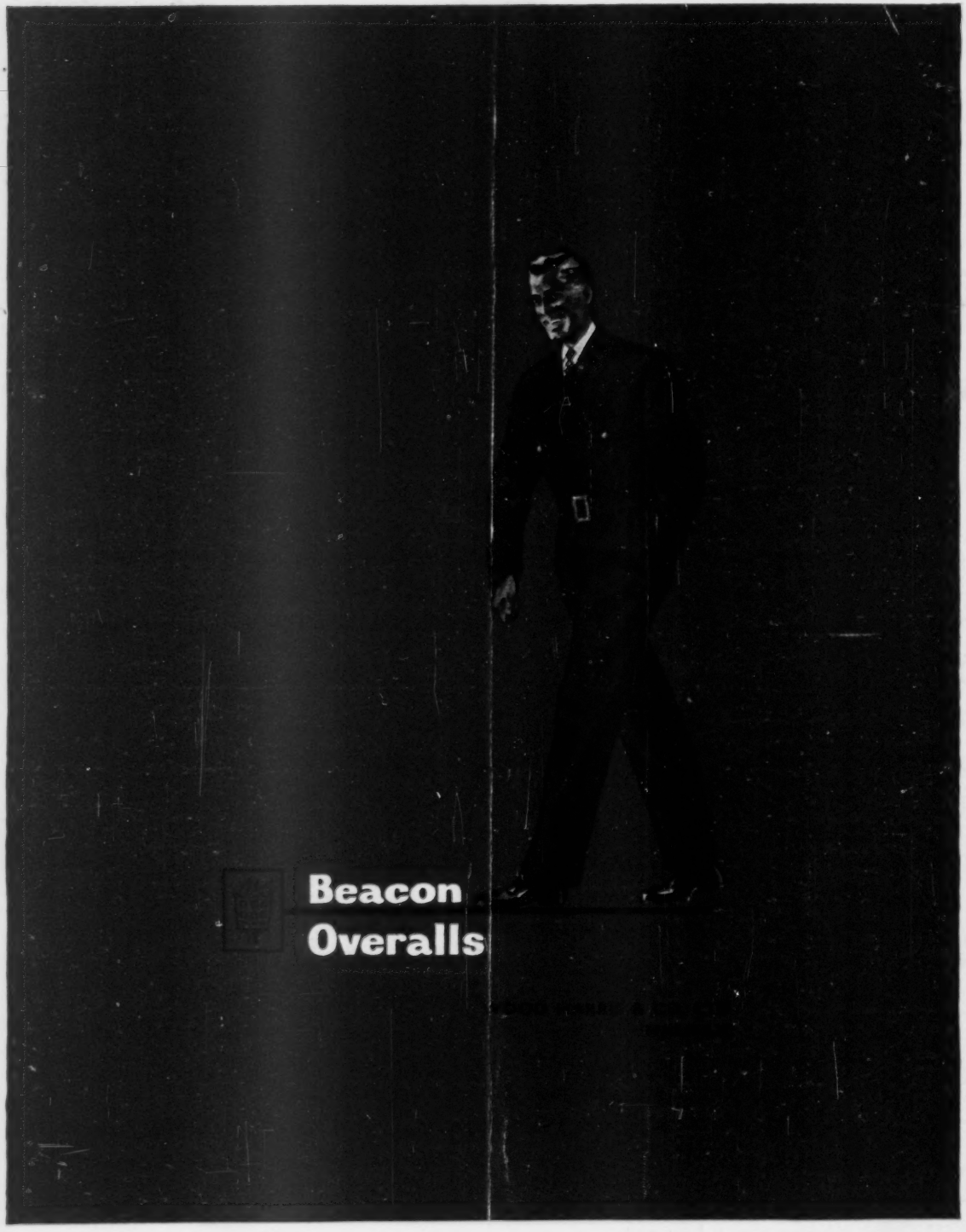
Beacon
Overalls